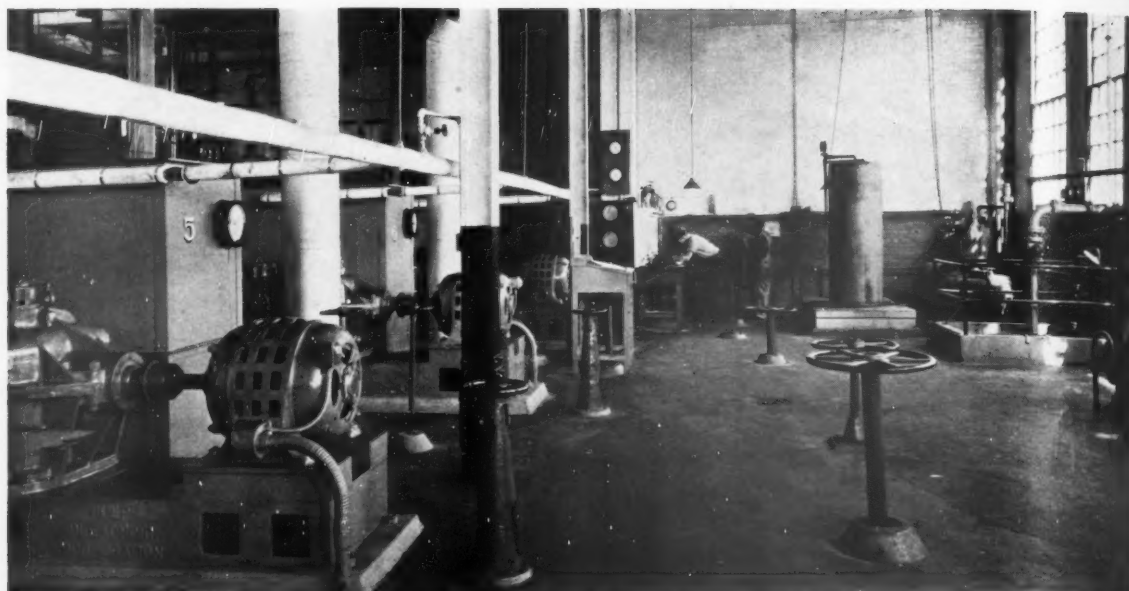


Pacific
PULP & PAPER
Industry

THE SOUNDVIEW PULP CO.
Everett, Washington
The World's Largest Bleached Sulphite
Paper Mill



The Soundview Pulp Company has used the Chlorine Dispersion Method in Bleaching since 1935

CHLORINE DISPERSION*

Pennsylvania Salt made available to pulp mills this novel and efficient method of introducing elemental chlorine into the bleaching of pulp. The method involves the production and use of chlorine dispersions in excess of the solubility of chlorine in water, and the feeding of the unbroken dispersion to pulp in multi-stage bleaching. It has been used successfully by the Soundview Pulp Company of Everett, Washington, since 1935.

Pennsylvania Salt retains exclusive licensing rights to this method in the United States.

*U. S. Patent 1,971,241 dated August 21, 1934. Also fully protected in twelve foreign countries.

Our technical staff is immediately available to help fit our products to your particular requirements, and we will gladly cooperate with mills who desire to use our Chlorine Dispersion Method.

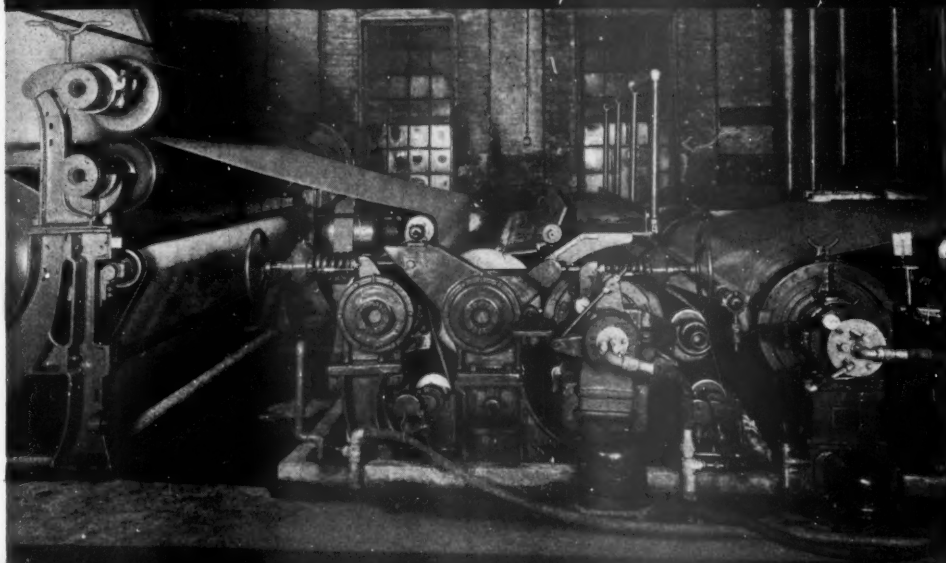


PENNSYLVANIA SALT MFG. CO. OF WASHINGTON
TACOMA, WASHINGTON

PENNSYLVANIA SALT
chemicals

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A YEAR OF PROGRESS



BELOIT HORIZONTAL *Dual Press*

PATENTS PENDING

• During the first year 7 Beloit Dual Presses were installed and are now running making a variety of papers.

There are 16 additional Dual Presses being constructed and these will be in operation soon.

This new type Press has received world-wide recognition and is considered by many the most outstanding improvement in paper machines in recent years.

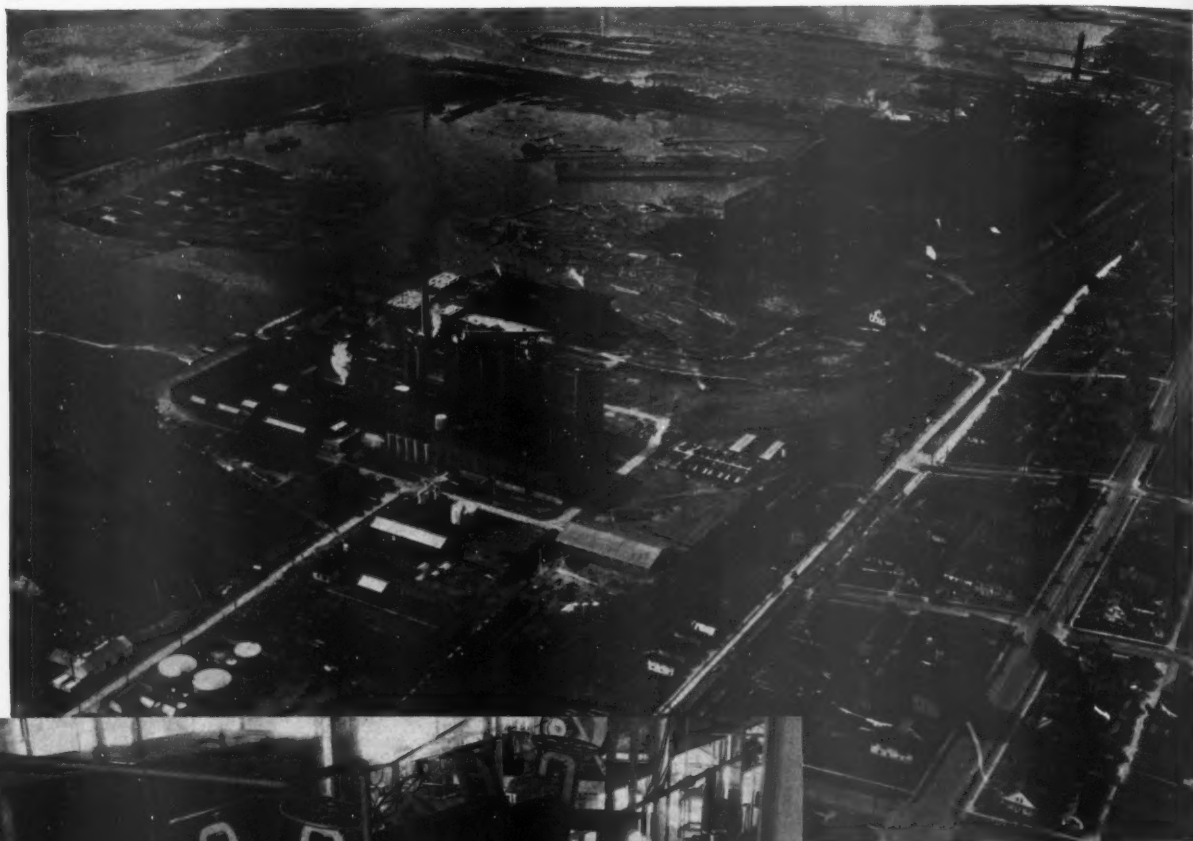
THE BELOIT WAY



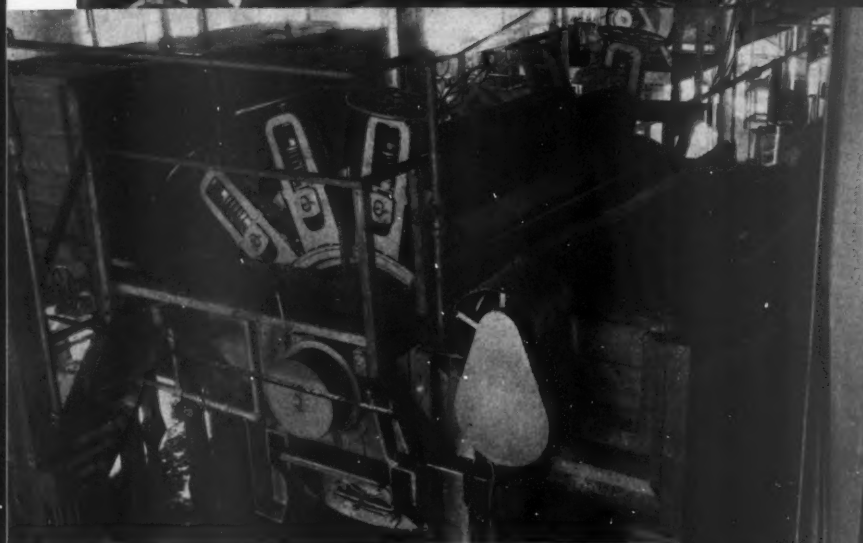
IS THE MODERN WAY

BELOIT IRON WORKS BELOIT
WISCONSIN

The New Addition to **SOUNDVIEW** **....THE WORLD'S LARGEST**



*Soundview Pulp Company,
largest bleached sulphite
pulp mill in the world.*



*Oliver-Young Filter used as a high density
thickener.*

*Oliver-Young Filter used as
a pulp washer.*



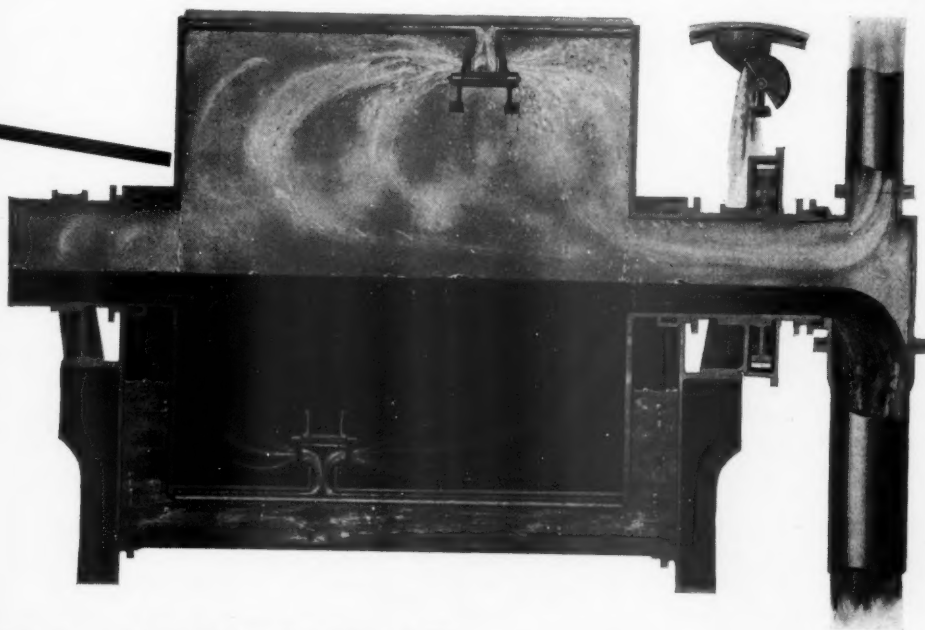
PULP COMPANY *Making It* BLEACHED SULPHITE MILL

100% OLIVER-YOUNG

Every bit of vacuum pulp washing and thickening in this new section of the Soundview Pulp Company's mill is done on Oliver-Young Filters. The various uses are as follows:

2 units in parallel washing and thickening raw sulphite.
1 unit washing chlorinated stock.
1 unit washing and thickening pulp.

1 unit first-stage bleach washing.
1 unit second-stage bleach washing.



The unique design of the Oliver-Young Filter accounts for its remarkable success as a washer and thickener of chemical stock—particularly free stock. It has exceptionally high capacity due largely to the unrestricted flow of filtrate through the filter from cover to leg. Its washing efficiency, coupled with minimum water requirements exceeds that of any other filter on the market. The free flow permits the rapid dis-

placement of chemicals. Foaming is negligible on stock subject to this undesirable action because there is nothing to cause foaming: no tortuous, restricted turns; no small diameter piping; and the drum, acting as a receiver, keeps air and liquid from mixing. Any air in the filtrate quickly separates in the Oliver-Young drum.

It is not surprising that pulp and paper mills are very much interested in this proved cost-reducing filter.

OLIVER
UNITED FILTERS

INC.



33 West 42nd Street
New York, N. Y.

221 N. La Salle Street
Chicago, Illinois

351 California St., San Francisco, Calif.

FOXBORO CONTROLLERS

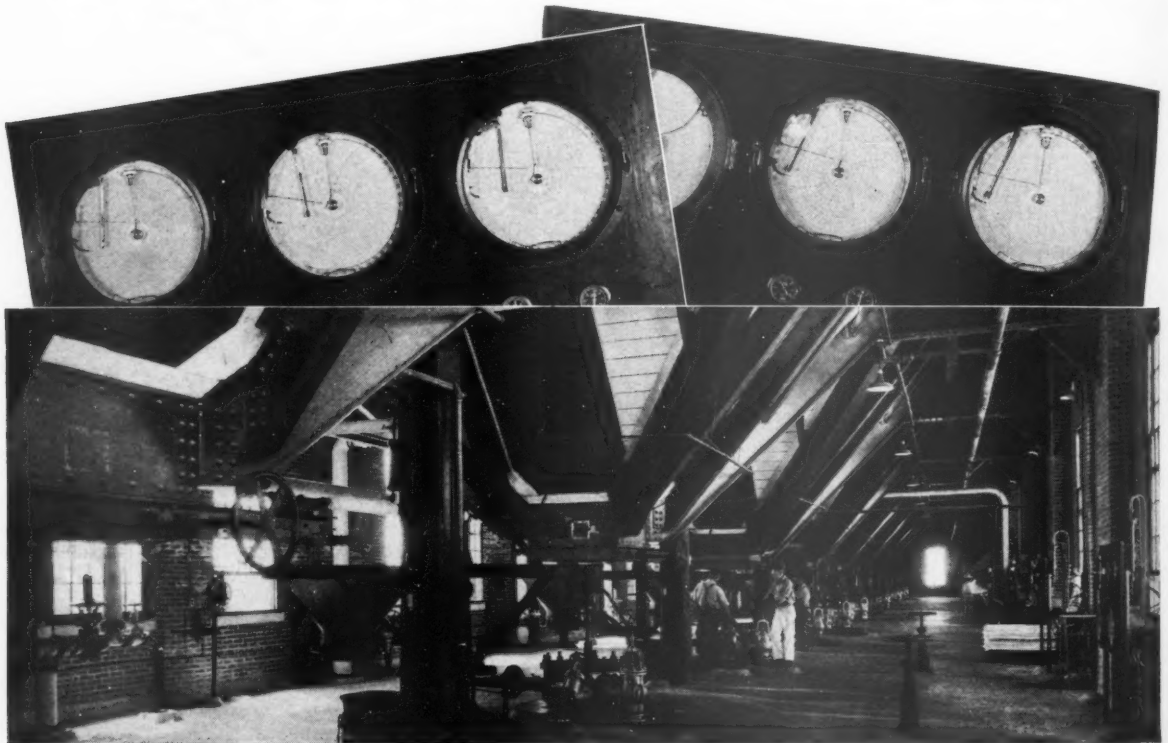
in the WORLD'S LARGEST BLEACHED SULPHITE PULP MILL

... THE SOUNDVIEW PULP COMPANY

Here in the largest bleached sulphite pulp mill in the world the digesters are under complete instrument control. Foxboro Controllers have been chosen. Such a selection is endorsement of the accuracy and response of Foxboro Instruments and the engineering skill which only experience can develop. It is typical of the trend towards complete instrumentation and the pref-

erence for Foxboro which pulp and paper mills evidence in all parts of the land.

Bulletin No. 219 gives a comprehensive discussion of modern Digester Instrumentation... Write for a copy... The Foxboro Company, 110 Neponset Avenue, Foxboro, Massachusetts, U. S. A... Branch offices in 25 Principal Cities.



Foxboro Stabilog Controllers keep these digesters functioning efficiently. They are a vital aid in producing better pulp. The two

panels shown constitute a control unit for one digester. Their location is clearly shown along the right-hand wall of the operating floor.

FOXBORO
REG. U. S. PAT. OFF.
Certified **DIGESTER CONTROL**
RESPONSE · ACCURACY

10 YEARS AGO IN PACIFIC PULP & PAPER INDUSTRY

JULY-AUGUST, 1927

BOOM! Ghost goes from Port Townsend ... Coast Sets Another Record Schmidt Coats, Then Festoons Ream Takes the Count



Boom - Ghost - Boom:

Ten years ago Ed Simms was a hero in Port Townsend. Up to then P. T. had been a ghost town, according to *Pulp*, relic of a hoped-for boom of the Eighties which never developed. The Zellerbach interests had a \$2,500,000 kraft mill to build that year. They liked Port Townsend's site, harbor, timber resources - but P. T. had no water, and the Zellerbachs couldn't wait. "Give me a week," Ed Simms said, "and I'll get you a guarantee of ample water." Simms and colleagues pledged 915 of the 943 voters to support water bonds at election! Port Townsend got the kraft mill - and that's how cities grow in the tall timber.

5-year Record in PNW:

Coast visitor in the summer of '27 was Dr. Hugh P. Baker, Executive Secretary of the American Paper and Pulp Association. He gave a number of addresses, which *Pulp* reviewed in August. Highlights: more pulp and paper activity in the Pacific Northwest in the preceding five years than in any other section for a like period... stronger tendency in PNW toward integration of sawmills and pulp-mills than in any other section of U. S.... Suggestions: assure permanence of the forests by proper fire prevention measures and systems of taxation which do not force cutting; develop the industry soundly by preceding construction with thorough investigation. Good soothsayer, Dr. Baker predicted a promising future for the industry.



Pulp Plants Bloom:

Mid-summer news in '27 included generous portions of new construction. *Pulp* reported beginning of surveys in the Nimpkish River country, northern Vancouver island, for Canadian Forest Products, Ltd., planning a \$10,000,000 pulp, paper and sawmill enterprise there to improve and expand the 50-ton mill of the predecessor Beaver Cove Pulp & Timber Co. ... California's second pulp plant was being planned by the newly-incorporated Sacramento Development Co., to be located south of the State Capital. White fir slabs, edgings from California sawmills, and cordwood were to be the raw material in the \$700,000 plant... Bates Valve Bag Co. of Chicago had found Western kraft made better paper to stand Western cli-



mate conditions than did Eastern. Just opening their new \$300,000 plant in Los Angeles, they were using Coast stock, with a plant capacity of 100,000 bags, 50 to 125 lbs. strength, per day... In Tacoma, Shaffer Box Company were demonstrating Dr. Baker's observation of sawmill-pulp-mill integration by building a \$750,000 pulp mill addition to their box shock mill... Significant of comparable progress in paper trade activities was the adoption August 8 of the Thousand-Sheet Count by Pacific States Paper Trade Association, to replace the old ream count.

Coast's First Coater:

While pioneer mills were pushing into the timber in the Northwest in 1927, *Pulp* reported pioneering also in San Francisco. Schmidt Lithograph Co. was already an old-timer in its field - old enough to dislike dependence on the East for coated label paper. *Pulp* for July described the coated paper plant which Schmidt had established the year before: first on the Pacific Coast, occupying the entire second floor of Schmidt's huge plant. Coating and festooning machines were very latest... Today Schmidt's is still the only coating plant on the Coast. Sales Manager MacLeod says it operates 24 hours a day almost continuously, supplying many users besides Schmidt's own plant.



First Ad:

Early issues of *Pulp* grew fatter and fatter as enthusiastic sellers to the industry advertised. Felts, Fourdriniers, Filters, Chippers, Shippers. First manufacturer of pulp-and-paper-making supplies to advertise in *Pulp* was Great Western Electro-Chemical Company. Today Great Western is proud of having been an advertiser in *Pulp* for ten years, hopes in the next decade to present new products and processes to the Industry through *Pulp's* pages.



GREAT WESTERN ELECTRO-CHEMICAL CO.



9 MAIN STREET, SAN FRANCISCO
PLANT: PITTSBURG, CALIFORNIA
NEW YORK SEATTLE LOS ANGELES

SELLING AGENTS
for WOOD PULP and PAPER



BULKLEY DUNTON PULP CO., Inc.
295 MADISON AVENUE NEW YORK, N. Y.
CABLE ADDRESS: BULKTON



*The Journal of the
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AUGUST • 1937

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HARLAN SCOTT
Editor

JOHN E. BROWN
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KEMPER FREEMAN
Production Manager

MILLER FREEMAN, JR.
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OFFICES

Seattle

PUBLISHING OFFICE
71 Columbia St.
Tel. MAin 1626

Portland

John E. Brown
1220 S. W. Morrison St.
Tel. AT. 8890

San Francisco

Sam Hawkins
121 Second St.
Tel. GA. 5887

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Calvin D. Wood
124 W. Fourth St.
Tel. MUtual 5857

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Stockholders Approve Puget Sound's New Mill

At a special meeting of stockholders in the Puget Sound Pulp & Timber Company, held at Bellingham, Washington, July 27th, the proposal to construct immediately a new unbleached sulphite mill, was approved by a large majority.

The meeting was called by President Ossian Anderson and the company's board of directors to consider the plans for financing the new addition which has been designed by and will be constructed under the supervision of Cavin, Marshall and Barr, consulting engineers.

At the stockholders' meeting, after the routine preliminaries of checking proxies and reading of the proposal, President Anderson gave a statement covering the operations of the company in detail. He outlined the conditions which influenced the directors to authorize the proposed expansion of the Bellingham mill capacity by the construction of a separate unit to produce unbleached sulphite pulp.

Mr. Anderson explained that last year the directors had approved the negotiation of a purchase option on the Morrison Mill Company's waterfront property adjoining the present pulp mill. The additional ground and frontage on deep water were desirable in order to provide room for the present expansion program, and also to assure the Puget Sound Pulp & Timber Company of permanent access to salt water shipping over its own docks.

This purchase option on the Morrison property was exercised May 1st of this year.

In approaching the subject of the new financing by the company, Mr. Anderson reminded the stockholders that the present mills owned by the company at Anacortes and Bellingham had been started in 1924 as "pilot plants" for the manufacture of sulphite pulp from mill waste, and that they were the first mills to manufacture sulphite pulp for sale on Puget Sound. He also pointed out that the first log breakdown plant in conjunction with a pulp mill had been built under his direction, and that a great deal had been learned about the manufacture of sulphite pulp from western woods since the Puget Sound Pulp & Timber Company had first begun production.

It is now time, Mr. Anderson told the shareholders, to build a new plant incorporating the proved processes developed in the thirteen years experience of the Puget Sound Pulp & Timber Company's operations, and to begin a general modernization of the two present mills.

Following the answering of several questions concerning points not mentioned in Mr. Anderson's statement, a vote was taken. Out of 85,643 shares voting, 79,316 favored the financing plan and but 6,327 opposed it.

The company's prospectus for registration of the new shares has been filed with the Securities and Exchange Commission and it is expected that shortly after the middle of August the sale of the new securities will have been effected.

A Profitable Year

It is understood that the Puget Sound Pulp & Timber Company earned a net profit of approximately \$260,000, before income taxes, in the first six months of this year, or a little better than \$2 per share. Earnings for the calendar year are estimated at \$575,000. Dividends of \$1 per share have been paid to stockholders in the first six months of this year.

On behalf of the board of directors Mr. Anderson spoke on the financing plan expressing the opinion that the plan represented the best program that could be arranged at this time and that it would prove very beneficial to the progress of the company.

The Financing Plan

Briefly, the plan for new financing to build the 125 tons per day unbleached pulp mill at Bellingham, consists of:

A proposal to issue and sell 125,000 shares of 6 per cent convertible preferred stock, and a proposal to enter into an option for the issuance and sale of an additional 45,500 shares of common stock. No bonds nor debentures are planned. The plan proposes an issue of 135,000 shares of the preferred but the issuance and sale of but 125,000 shares.

The present non-par common stock issue of 124,896 shares is to be cancelled and an issue of 500,000 shares substituted having no par value. Owners of the present common are to receive two shares of the new common for one of the present stock or a total of 249,792 shares. Of the remaining 250,208 shares of the new common, 45,500 are to be optioned for sale, the balance to be held by the company for the conversion of the new preferred stock "or shall be optioned for sale in connection with said preferred stock."

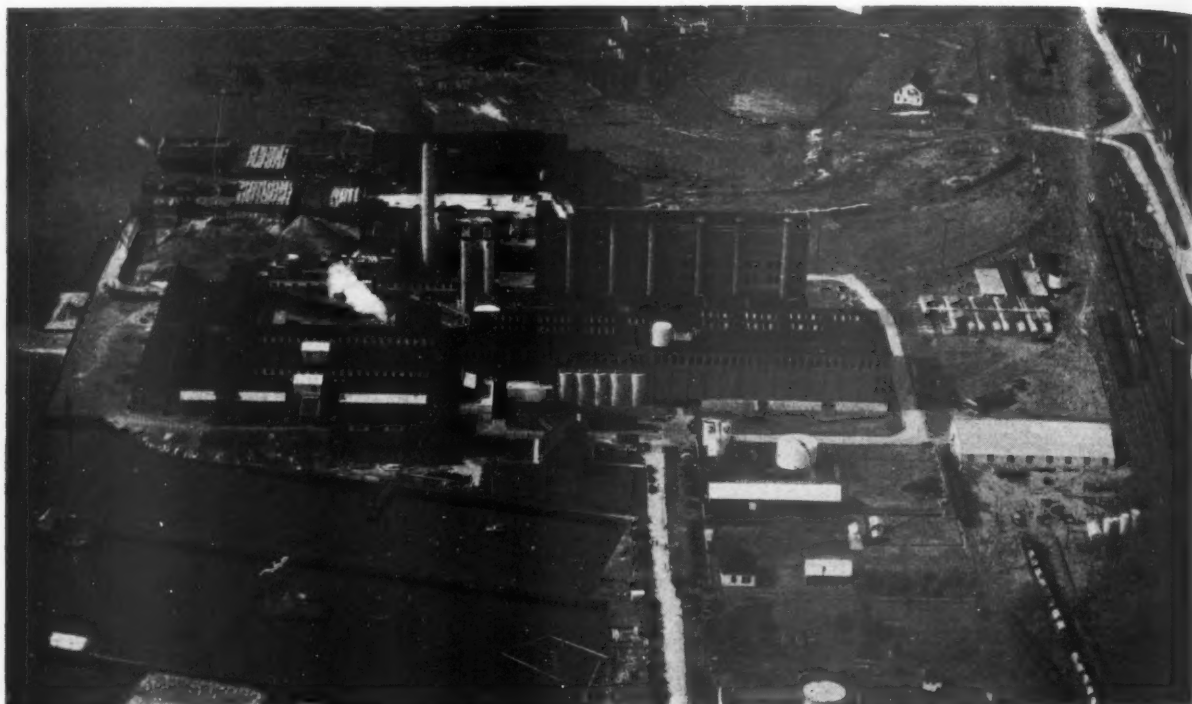
The new 6 per cent convertible preferred stock is to have a par value of \$20 and will be entitled to dividends at the rate of \$1.20 annually. All shares issued prior to July 1, 1938, will be cumulative from July 1, 1937. It may be redeemed on any quarterly dividend payment date at the option of the company at \$24 per share plus accrued and unpaid dividends.

Each share of the convertible preferred is convertible into 1½ shares of common stock prior to July 1, 1938; 1¼ shares of common stock thereafter and prior to July 1, 1939; and 1 and 1/9 shares of common stock subsequent to July 1, 1939.

The proposed underwriting of securities of the Puget Sound Pulp & Timber Company by the Bankamerica Company, subsidiary of Transamerica Corporation, brings to the pulp and paper industry of the Pacific Northwest the interest of one of the leading financial houses in the country and indicates the constructive attitude of capital toward this industry.

The Soundview Pulp Mill

In June, 1937 ...



In April, 1936 ...



Soundview Completes Expansion Program

Daily Production of Bleached Sulphite Pulp Increased From 200 to 485 Tons Per Day—Now World's Largest Bleached Sulphite Pulp Mill—Recently Acquired Timberlands Provide Integrated Operations From Tree to Finished Pulp

THE EXPANSION programs of Pacific Coast pulp and paper mills have been making news during the past two years but none has attracted the interest of the world pulp industry as has the expansion program of the Soundview Pulp Company at Everett, Washington.

This is natural for the Soundview development, completed June 1st of this year, elevated the company to top rank position as the world's largest single mill producer of bleached sulphite pulp with a daily output of 485 tons or an annual capacity of approximately 160,000 tons.

Other factors in the Soundview program contributed to this wide interest. In May 1936 when the directors proposed to the stockholders that a new unit producing 125 tons per day be constructed immediately, the Soundview mill was producing some 200 tons per day. A year later, on June 1st, 1937 Soundview had not only completed this first new unit but was placing a second unit of equal capacity into production and the daily capacity was 485 tons, two and one-half times greater than the daily capacity a year before.

This large increase in capacity was

constructed without interfering in any way with the basic 200 tons per day output. In fact, during the construction period the quality of the regular production was steadily improved.

Another interesting point in the Soundview development was the completion of both new units before the dates set in the original announcements, reflecting the executive and engineering ability of the men in the Soundview organization. When Harry H. Fair, chairman of the board and U. M. Dickey, president of Soundview laid the plans for the first of the two new units before the stockholders on June 20th, 1936, they said that the new producing division would begin making pulp on March 1st, 1937. Cooking in the three digesters of the first new unit actually began on January 28th and on February 1st pulp was coming off the new machine.

Again, when the stockholders approved the second unit in January of this year it was announced that it would be producing before July 1st. Later, this was advanced to June 1st. May 28th found the digesters of the second new unit cooking chips and June 1st pulp went over the second new drying machine. Due to painstaking advance planning, including the foresight which called for rail shipment from the East of equipment which had to be purchased there, the strike of the Pacific Coast maritime unions of last winter did not delay Soundview's construction schedule.

With the expansion of productive facilities to 485 tons of pulp per day and the rising cost of wood caused by increased demand, it became apparent to Soundview's management that the daily conversion of around 500,000 board feet of timber into sulphite pulp necessitated protecting the company's customers and stockholders against the fluctuations of the open log market.

Consequently a plan was evolved which insures Soundview a perpetual wood supply entirely under the company's own control. Care was taken in embarking upon the ownership of large tracts of timber and upon the logging of that timber, to provide the maximum flexibility of woods operations.

Here in the Pacific Northwest, where stands over half of the nation's timber supply, it is not always economic for a pulp mill owning timber to use it. During periods of rising costs and markets, as at present, it is advantageous for a mill to control its own wood supply, but from 1931 up to the latter part of 1936 it was more profitable for a pulp mill to buy its wood in the open market.

Hence, in providing the mill with a timber supply Soundview's executives desired to avoid any arrangement which



HARRY H. FAIR,
Chairman of the Board,
Soundview Pulp Company

From Tree to Finished Pulp

As Soundview was completing its expansion of production facilities a less spectacular but highly important development was taking place, a development of vital importance to Soundview's paper mill customers and, at the same time, strongly indicative of the trend toward balanced utilization of the forests in the Pacific Northwest.

Since the Soundview Pulp Company became a producing organization on March 1st, 1934 all of its wood supply had been purchased either on contract or on the open market. Western hemlock logs were bought from the numerous logging operators around Puget Sound and cordwood was purchased from pulpwood cutters who worked small tracts of timber some of which was second growth.



U. M. DICKEY,
President,
Soundview Pulp Company



SOUNDVIEW TIMBER FROM THE AIR » » » An aerial view of a part of the Soundview timberlands in the foothills of the Cascade Mountains » » » Two truck logging operations appear in the foreground.

would entail such high fixed charges that the mill would have to do its own logging at all times regardless of the log market.

This they succeeded in accomplishing. The recently acquired timberlands and logging facilities have the maximum of flexibility. Soundview can produce its own wood supply or buy in the open market as the situation may warrant.

The Soundview Pulp Company production of bleached sulphite pulp is a fully integrated operation with its own timber, logging equipment and 485 ton mill.

Changing Timber Economics

The purchase of a timber supply and logging facilities by the Soundview Pulp Company is of interest and significance to the entire pulp and paper industry.

In entering the timber industry Soundview's largest single purchase was of the entire assets of the Lyman Timber Company which included more than 600,000,000 board feet of standing timber, cut-over lands, well-stocked with

second growth, mostly hemlock, logging equipment and a logging railway, the Puget Sound and Baker River Railroad, which runs from the timber stands in the Cascades to the waters of Puget Sound, crossing the Great Northern Railway's Seattle to Vancouver, B. C. line.

The Lyman Timber Company, now a wholly owned subsidiary of Soundview, had curtailed its logging operations because it wanted Douglas fir for lumber and its remaining timber stands were largely Western hemlock. Hemlock was not popular with lumber buyers and at that time there was insufficient demand by pulp mills on Puget Sound to make logging hemlock profitable.

The Lyman Timber Company was one of many logging concerns facing the same problem. Up until a decade ago the loggers of the Pacific Northwest had been working since the beginning of logging in timber stands that ran from 5 to 10 per cent hemlock. As higher elevations were reached the percentage of hemlock increased running up to 50 per cent and frequently more of all the standing timber. Whereas in the past it had either been left standing in the woods or sold as a by-product, it became

necessary to sell the hemlock as the primary product and the smaller percentage of Douglas fir as the by-product. The developing pulp industry wanted hemlock could not use fir, but there were not enough pulp mills then and today there are still not enough pulp mills to strike a balance in the demand for hemlock as compared with Douglas fir although the growth of the West Coast pulp and paper industry is requiring more and more hemlock each year. (See REVIEW NUMBER, May 1937—Increase in pulp capacity, 1923-1936 is 232 per cent; increase in paper capacity 138 per cent)

While the Lyman Timber Company wanted fir for lumber and found the growing percentage of hemlock unprofitable to log, Soundview wants hemlock for its pulp mill at Everett and markets the fir logs as a by-product, turning the Lyman operations into a profitable undertaking.

The Soundview-Lyman example represents the changing economics of timber utilization in the forests of the Pacific Northwest. Continued growth of pulp and paper production in this region will, in time, bring about a bal-

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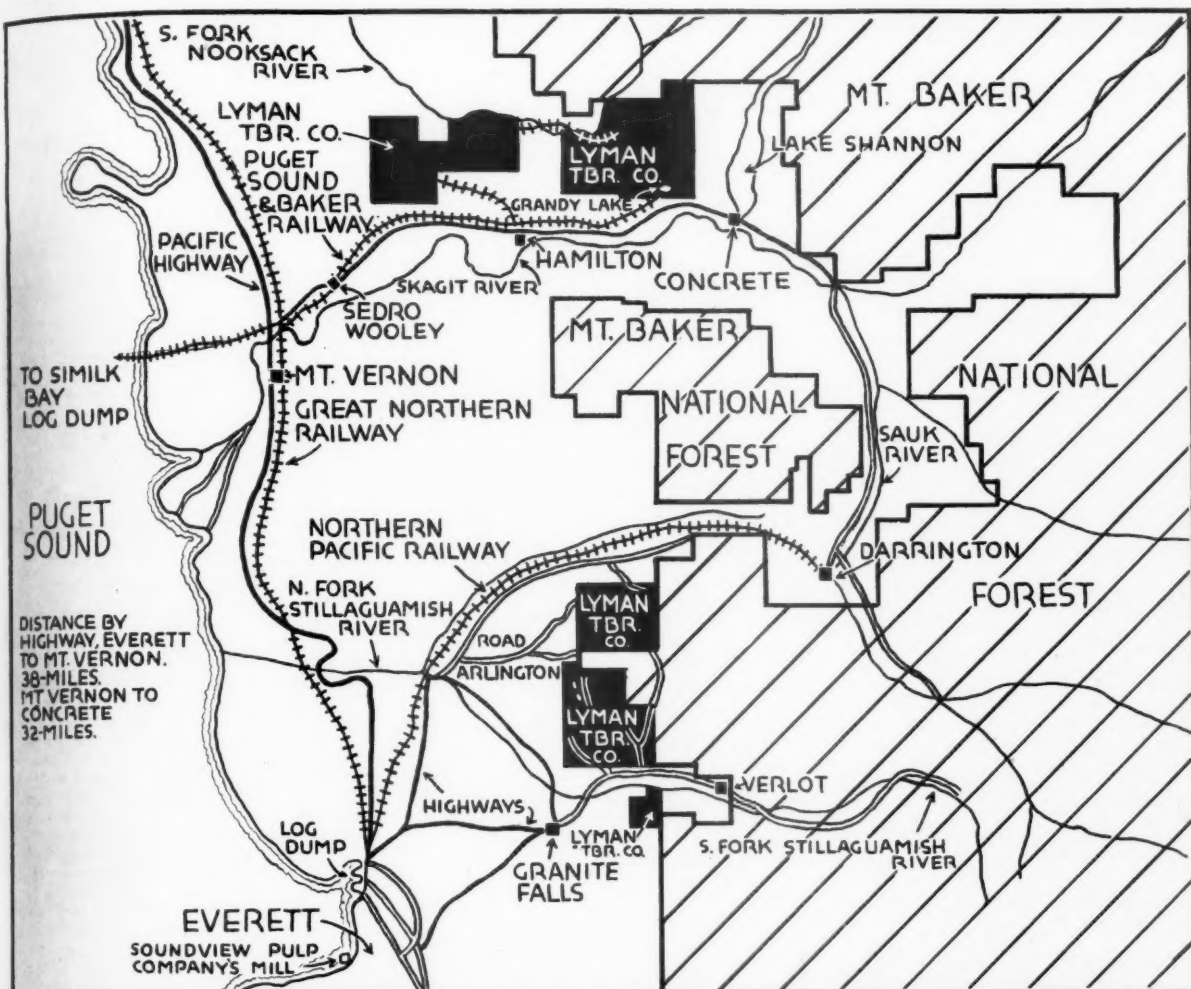
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THE STRATEGIC LOCATION of Soundview's recently acquired timber stands adjoining National, State and County held timber is shown in the above map » » » The black areas marked Lyman Timber Company represent the present Soundview owned timber » » » Note the relatively short distance the pulpwood logs and cordwood must be transported to the pulp mill at Everett.

ance in hemlock-fir demand and value thereby returning greater wealth to the people of the Pacific Northwest through more perfect utilization of the region's great timber resources.

Important to the future of the pulp and paper industry is the fact that the cut-over lands of this area have naturally reseeded largely in Western hemlock which is growing rapidly, proving that timber in the Pacific Northwest is a renewable crop.

Soundview's History

The Soundview Pulp Company was born of the depression.

Recently the financial editor of a leading California newspaper wrote, "The story of the Soundview Pulp Company is one of the most interesting financial comebacks in the history of the Pacific Coast. It is the story of a defaulted bond issue turning into profits for those bondholders who had the foresight or good fortune to ride through under the capable management of Harry H. Fair and U. M. Dickey."

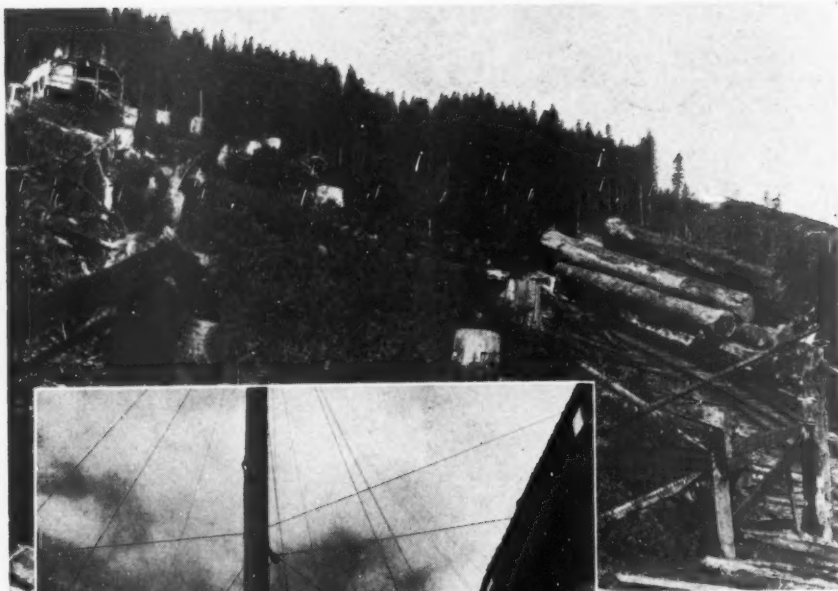
Soundview became an operating company on March 1st, 1934 when it took over active management of the pulp mill at Everett, Washington with working capital of approximately \$40,000, borrowed from directors and stockholders on the company's notes. Prior to March 1st Soundview had been a holding company since its formation in July of 1932 to take over the property at Everett in the interests of the bondholders following the default on the bonds February 15, 1932, by the Puget Sound Pulp & Timber Company.

The latter company constructed the original 175 tons per day bleached sulphite pulp mill in 1929 and 1930. Finished in the summer of 1930, the Everett mill unfortunately came into production as the market for pulp began to decline and prices started their slide to the unprofitably low levels of 1932 and 1933. The mill had no opportunity to get under way, to even start amortization of the heavy investment before the depression hit with full force. In this period when even some of the most solidly entrenched companies in the industry found it impossible to avoid reorganization, the Everett mill was up against overwhelming odds.

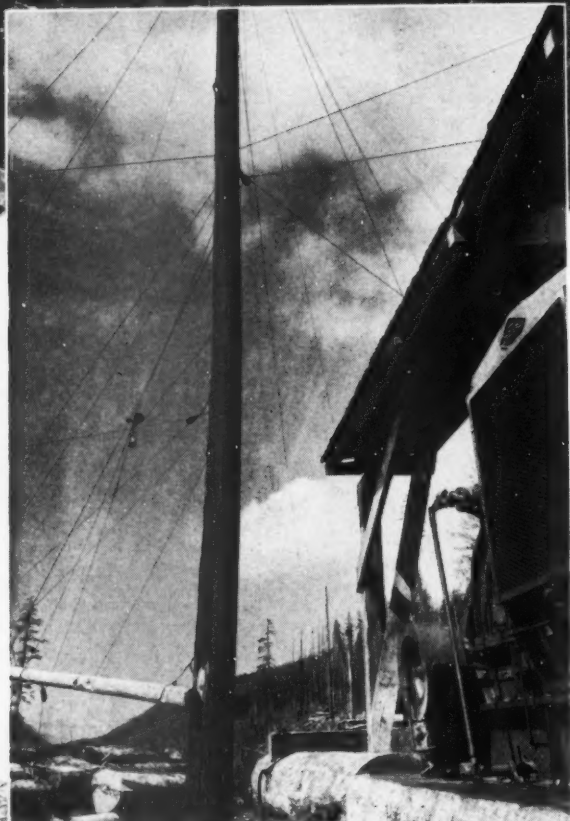


LEO S. BURDON,
Manager, Soundview Pulp Co.

Soundview Logs In the Ca



Above: The 4800-foot incline with a big load of logs being lowered down the steep grade.



Left: A Clyde gas yarder at work in the Grandy Lake logging operations.

Below: Skagit Waukesha powered donkey "cold decking" for Washington skidder near Camp 14.



Following the default the 700 bondholders, assisted by Mr. Fair whose company, Peirce, Fair & Company, had handled the issuance of the bonds and held a large share, organized a syndicate to acquire the property at Everett. The syndicate was intended as a salvage operation, aiming to conserve the assets for the bondholders. Peirce, Fair & Company sacrificed its large equity in the interests of the other bondholders. On July 15, 1932 the syndicate was organized into the Soundview Pulp Company.

The original issue of 6 per cent bonds amounting to \$4,500,000 which were defaulted by the Puget Sound Pulp & Timber Company February 15, 1932, had been purchased by Peirce, Fair & Company for \$4,185,000. These bonds together with 4,500 shares of common and preferred stock were transferred by Peirce, Fair & Company to the syndicate. Under the terms of the syndicate agreement the syndicate manager was to receive 25 per cent of all profits from the syndicate operations, but Peirce, Fair & Company waived all claims.

After the bond default it was desired to avoid foreclosure and the expenses such a step would entail. Consequently, an arrangement was negotiated with the Puget Sound Pulp & Timber Company to deed to the syndicate all its assets in Snohomish County in exchange for the surrender and cancellation of the bonds.

At this time the syndicate manager, Peirce, Fair & Company, voluntarily turned over to the syndicate for the benefit of all the bondholders 36,050 shares of preferred and common stock it owned of the Puget Sound Pulp & Timber Company. In February 1933 the syndicate sold its entire holdings of Puget Sound stock.

From the time of the formation of the Soundview Pulp Company in July of 1932 until it assumed operating control of the Everett mill March 1, 1934, it leased the plant to the Puget Sound Pulp & Timber Company for the nominal rental of \$1 per month. In the agreement surrendering and cancelling the bonds the Everett mill passed to control of the bondholders but the Puget Sound Pulp & Timber Company retained its pulp mills at Bellingham and Anacortes, Washington, the sawmill at Clear Lake, the logging railroad, and the large stands of pulp timber in the Cascades east of Clear Lake.

The same financial editor quoted above wrote of the arrangements whereby the Soundview Pulp Company was formed by the bondholders and Peirce, Fair & Company voluntarily sacrificed its own interest for the benefit of all the bondholders, "This is a record of which the men formerly associated with Peirce, Fair & Company may indeed be proud." (Peirce, Fair & Company has since been dissolved)

Cascades

With the formation of the Soundview Pulp Company Mr. Fair, whose home is in San Francisco, was elected president, and U. M. Dickey of Seattle was chosen executive vice-president. Mr. Dickey was thoroughly familiar with all phases of the pulp industry having taken a deep interest in the mill at Everett as a director of the Puget Sound Pulp & Timber Company. When Soundview took over operations Mr. Dickey assumed active supervision and Leo S. Burdon was selected as manager. Mr. Burdon came to Soundview with a background of broad experience in the manufacture of pulp paper on the Pacific Coast.

Later Mr. Dickey was elected president of Soundview and Mr. Fair became chairman of the board. Walter A. Starr and Walton N. Moore of San Francisco are vice-presidents, and H. L. Barbash of the same city is secretary.

Directors of the Soundview Pulp Company include: U. M. Dickey, Edward L. Eyre, Harry H. Fair, Robert G. Hooker, C. O. G. Miller, Walton N. Moore, Henry D. Nichols, Stuart L. Rawlings and Walter A. Starr.

G. J. Armbruster is general superintendent of the Soundview pulp mill. Mr. Armbruster came to Everett in 1930 before the original mill was completed and he has been in charge of pulp production ever since. Before coming West he was superintendent of pulp production for the Fraser Companies, Limited at Edmundston, New Brunswick.

What began as a move by the bondholders to salvage what they could of their investment has resulted in the world's largest bleached sulphite pulp mill within the space of a little more than three years. A major payroll was saved to the City of Everett, for Soundview now employs nearly 500 persons directly at the Everett mill, approximately 200 more in the woods operations and provides indirect employment for a great many more through its purchases of supplies and equipment. It contributes its share of city and state taxes, and has rewarded the loyal bondholders, who are now stockholders, with a return on their investment.

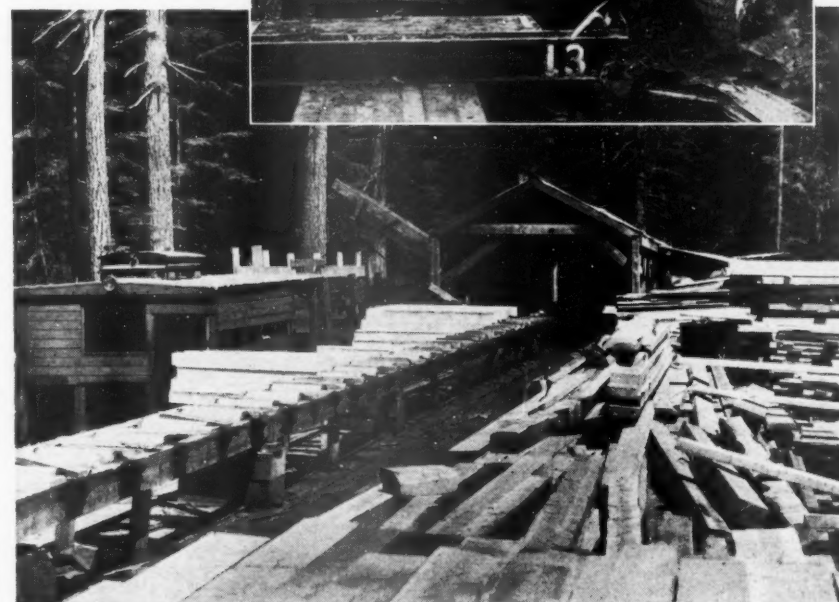
Commenting upon the development of the Soundview Pulp Company, a San Francisco investment banking firm stated in a recently issued booklet on the company, "Improving conditions in the pulp and paper industry have, of course, figured importantly in the company's progress, but to this must be added aggressive and farsighted management policies, ability to sense and take advantage of trends favoring growth. Extensive experience and ability in the field of practical financing also have contributed to the company's orderly development."



Above: Building a truck road in a hurry near Grandy Lake with a "Caterpillar" RD8 and LeTourneau bulldozer.



Right: Big Clyde tree rigged skidder bringing in a turn to the landing.



Below: The portable saw mill which is doing a good job of salvaging from short and broken logs.

Logging For Pulp

Soundview is now one of the largest logging operators tributary to Puget Sound with a daily output in excess of 500,000 board feet of logs.

Since the recently acquired timberlands and logging facilities are closely allied with Soundview's two new bleached sulphite pulp producing units they are a part of the completed expansion program and it is of interest to examine them more thoroughly.

Hamilton, Washington, 60 miles from Everett by highway, is once more a logging center of importance humming with activity after many years of quiescence. The Lyman Timber Company, key operation in the Hamilton district, is being revitalized and its entire operation rehabilitated. There is probably no spot in all the Western logging field where so great a change is occurring, both as to method and policy, as in the Lyman Timber Company's operation in Skagit County, Washington.

The Lyman Timber Company, one of Washington's pioneer logging companies, was recently acquired lock, stock and barrel, by the Soundview Pulp Company of Everett, Washington. Soundview, through the Lyman Timber Company, now a wholly owned subsidiary, also recently acquired the large Canyon Lumber Company tract of timber in Snohomish County, as well as the whole of Wheeler Mountain and a number of other tracts of mature and second growth timber in Skagit and Snohomish Counties.

Through these timber and logging company acquisitions Soundview is providing itself with a supply of raw material for its large bleached sulphite pulp mill at Everett, Washington sufficient for the years to come.

Back of these company owned, strategically located timbered areas, lie vast holdings of the United States Forest Service, the State of Washington and its counties, all running heavily to pulp species, which will, in due course, be available for logging.

New Logging Policy

With the change in ownership of the Lyman Timber Company has come a complete reversal of woods and logging policy. Under the new set-up, hemlock, not fir and cedar, is the main objective. Tracts of timber, running heavily to hemlock that in the past have been dodged or passed up entirely, are now being logged, or will be logged. Moreover, instructions are passed along to the camp from the management to do as thorough a job of hemlock salvaging as is humanly and mechanically possible. That is why, in the pursuance of this new policy, many changes are taking place in method and equipment, in the Lyman Timber Company's far-flung operations radiating out of Hamilton.

Plans are rapidly unfolding for not only vigorous and energetic development of its steam and gas logging activities, which have always been and will for some years to come be extremely important but they also include the establishment of truck logging activities, a new venture for Lyman Timber Company. Back of both branches of logging

is the thought that it will be possible to set up a system of log production, and storage which will insure an uninterrupted supply of raw material for the pulp mill regardless of weather or climatic conditions. The pulp mill at Everett must always have logs. By late summer, 500,000 feet of logs daily should be coming out of the Lyman Timber Company's various units.

Grandy Lake Development

We now turn to an entirely new phase of the Lyman Timber Company's logging and one that promises to attract the interest of the Northwest logging industry. It will be interesting because it will be one of the largest truck logging projects in the West. This new operation is to be known as the Grandy Lake operation or Camp 17. New roads now being built will open up and make possible early development of the privately owned timber east of Grandy Lake as well as the timber in the Mt. Baker National Forest and state owned timber. The company will take all the hemlock logs offered from this area and boom and ship the fir and cedar.

The significance of the Grandy Lake project lies in the fact that it will be possible to store at least 30,000,000 feet of logs in the lake, thus providing a backlog of raw material which will take care of the pulp mill in the event of an interruption in logging in any of the camps, due to rain, snow or cold weather. Grandy Lake is only 800 feet above sea level and ordinarily does not freeze. However, the system of loading which is to be employed will enable the operators to keep the ice broken under the loading line, and they believe they will be able to keep loading in almost any kind of weather.

Preserving Beauty

Instructions have come out from headquarters that none of the timber around the lake itself is to be cut; thus the natural beauty of the spot will be preserved for recreational use by the public. As a matter of fact all the timber within a quarter of a mile of the lake will be kept intact and a portion of the lake will be kept free of logs for the benefit of fishermen. The lake will be raised two feet at the suggestion of the State Bureau of Fisheries.

Evidence of the intention of the company to salvage all the wood possible is found in the plan to provide near the Grandy Lake end of the truck road, a railroad landing where cord wood cut back in the hills and brought down on trucks, can be unloaded, stored and later loaded on cars. A railroad spur to handle wood cars is being extended into this landing.

Much of the land which has been logged in years gone by, by the Lyman Timber Company, today carries a nice stand of second growth. Reforestation is a word that will mean much in this organization in the future.

Clear cutting will prevail, much closer in fact than in the average operation where fir and cedar are the main objectives. In the Lyman Timber Company operations, they are now taking hemlock as small as ten inches on the stump. They are taking out all the good chunks, material that ordinarily stays in the woods. They also have a portable sawmill which is operating steadily cutting ties, stringers and plank used in the con-

struction of the company's railroad and bridges. This mill is cutting logs too small for lumber.

Regeneration

Scattered stands of defective or small timber are left standing for reseeded purposes and great care is exercised in burning the slash away from such trees so that they will not be destroyed until after they have served their purpose.

The Lyman Timber Company is pretty much a self contained organization. The company maintains a modern machine shop at Hamilton where any type of shop work can be handled. At present, the shop crew is rebuilding a logging car every day besides much other work. Locomotives, the company has four Shays, donkeys, etc., are all overhauled and repaired in this shop. They even buy all their brasses in the rough and do their own machining.

J. E. Seabloom is superintendent of the Lyman Timber Company. He has been with the company for a long time.

Among other important rehabilitation work in progress is that of putting into condition its Puget Sound & Baker River Railroad between Hamilton and Grandy Lake. New ties are being laid.

Much work is also being done on the mainline railroad into Camp 14. A new line will be built to tap the timber on the Nooksack. At Hamilton a new piece of railroad is under construction making a better connection between the Puget Sound and Baker River Railroad and the Great Northern, which will facilitate making up log trains.

Meanwhile, in spite of all the new construction and modernization that now is in progress and the opening of this Grandy Lake truck camp and the tractor show on Hightower Hill, there is no interruption in the flow of logs. In fact, week by week, more and more logs are coming down out of the camps to Hamilton, there being made up into trains and later dropped down to the company's dump and boom at Similk Bay. By fall, this stream of logs should have grown to about 600,000 feet per day, one of the largest daily log inputs in the West, and a supply that can be maintained from privately and publicly owned stumpage for many years to come.

The New Pulp Producing Units

THE second of Soundview's two new bleached sulphite producing units was nearing completion this past spring when the timberlands and logging operations, just described, were acquired.

This expansion program which, with the first step, increased the manufacturing capacity from 200 to 320 tons per day, and, with the second step brought it up to a rated daily capacity of 450 tons (early in August actual production was regularly over 500 tons per day), began in June of 1936 immediately following the approval of the first new unit by the stockholders at a meeting June 15. The announcement of the plans had been made by Mr. Fair, then president of Soundview, in May, and Soundview's engineering staff, under the direction of



PULP OF THE FUTURE » » » Second growth hemlock which will be ready for harvesting in a few years » » » Soundview holds a large acreage of second-growth timber and the company's timber operations are based upon a sustained-yield policy to insure a perpetual supply of pulpwood for the mill at Everett.

J. H. McCarthy, resident engineer, was all ready to start with a rush when final approval was given. Hardy S. Ferguson, pulp and paper mill engineer of New York checked all plans. Mr. Ferguson had designed and supervised the construction of the original mill in 1930.

In August the contract for the major building construction and for the installation of machinery was let to The Austin Company. Construction began about September 1st, 1936 and the buildings were completed December 20th. Prior to completion of the first new unit in January the contract with The Austin Company was extended to include the second new unit, and The Austin Company's crew kept right on working without interruption, completing their part of the job May 30th, 1937.

Work was rushed, two and three shifts being employed, but always closely followed the advance plans and the first unit made good the original announcement by starting cooking January 28th and drying pulp February 1st.

A second new unit, or the third unit, counting the original mill as the first, was discussed at the time the plans were formulated for the first new unit and

the buildings with the exception of the digester building were designed to accommodate further expansion. In January of this year Mr. Fair proposed to the stockholders that the second new unit, or third producing unit be constructed immediately upon the completion February 1st of the first new unit. In his statement to stockholders, Mr. Fair said in part:

"In their decision to project this new or second unit, your directors and management were motivated by an abundance of evidence of a growing world shortage of bleached sulphite pulp. This world shortage has become, in the interval, an acute reality. There is much more convincing evidence now that a further increase of productive capacity at the Everett plant not only involves no problem of profitable marketing, but that the best interests of the industry require that additional productive facilities shall be provided."

Stockholder approval was obtained and the second new unit began cooking May 28th and turning out the finished pulp June 1st, right on schedule, in fact, nearly a month ahead of the original plan.

In describing the building construc-

tion and equipment, the two new units will be considered together for clarity.

It should be borne in mind that during construction the original 200 ton mill maintained its daily production and that the new units operate separately giving Soundview great flexibility in production. Pulp of bond grade may be produced in the original mill at the same time book grades are being produced in the new units.

Improving the Breakdown Plant

With a steady stream of logs going through the breakdown mill it was no simple task to expand production facilities but the job was performed without curtailing the regular production. The interior of the breakdown mill was modernized to produce an hourly cut of 28,000 board feet. A new automatic trimmer was installed together with two Stetson-Ross cant barkers and one new Sumner Iron Works 72 inch chipper. The barkers are of the latest type and will accommodate 10 foot cants.

Enlarging the Power Plant

More steam was needed for cooking and drying in the two new units. One



The Two Unit Expansion of the Soundview Pulp Company at Everett, Washington, Completed in June, Is Indicated in the Above Photograph
 No. 1, digester building addition housing six new digesters; No. 2, the new blow pit; No. 3, new screen and riffler building; No. 4, is the new bleaching department; No. 5, new acid tower addition; No. 6, steam plant addition; No. 7, the new pulp storage warehouse; No. 8, addition to machine and repair shop; No. 9, the former pulp storage building which was converted into a machine room and now houses the new water filter plant; No. 10, new pulp storage warehouse; No. 11, space paper warehouse; No. 12, wood cleaning plant in which new equipment has been installed. New buildings, new machinery, new piping, new electrical system, new bleaching department, new screen and riffler building, new digester building, new acid tower, new steam plant, new machine and repair shop, new pulp storage warehouse, new machine room, new water filter plant, new pulp storage warehouse, new space paper warehouse, new wood cleaning plant.

new 848 horsepower four drum Stirling type boiler was installed alongside the four boilers of the same rating.

The new boiler was equipped and the old boilers modernized with new Bigelow-Liptak suspended arches and walls, using A. P. Green fire brick. Water cooled grates were installed in all furnaces and the boiler settings were finished with steel casing lined with asbestos millboard.

These boiler settings were specially designed for the burning of wet hemlock hogged fuel from the breakdown mill. The furnace design was prepared by the E. J. Bartells Company in conjunction with C. A. Shively, Soundview's steam engineer. In the boiler settings were incorporated several special features which have resulted in the economical and efficient burning of the wet hemlock waste. These are the result of the combined experience of Soundview and the Bartells Company. Water from the water-cooled grates is discharged under thermostatic control.

The induced and forced draft system is used together with cinder cone and other auxiliary equipment, all of which was supplied by the Fuel Economy Engineering Company of Seattle.

The steam supply lines from the boiler room throughout the entire plant were insulated by the E. J. Bartells Company using Johns-Manville 85 per cent magnesia and asbestos-sponge felted covering. The cinder cones and breeching at the boiler house are all insulated with a specially manufactured heat resistant insulating block.

On the new boiler, two Micromax round chart recorders are used, one for temperature measurements and the other for CO₂.

The temperature recorder is a two point instrument of the potentiometer type and records continuously the temperatures of the preheated air and flue gases. The primary elements used are thermocouples and the range of the instrument is 0 to 1000° F.

The record drawn by the instrument forms a band whose width indicates the difference between the two temperatures being recorded.

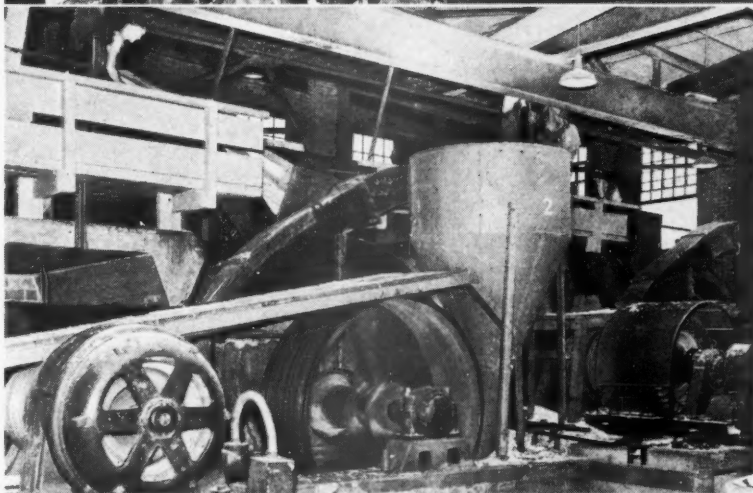
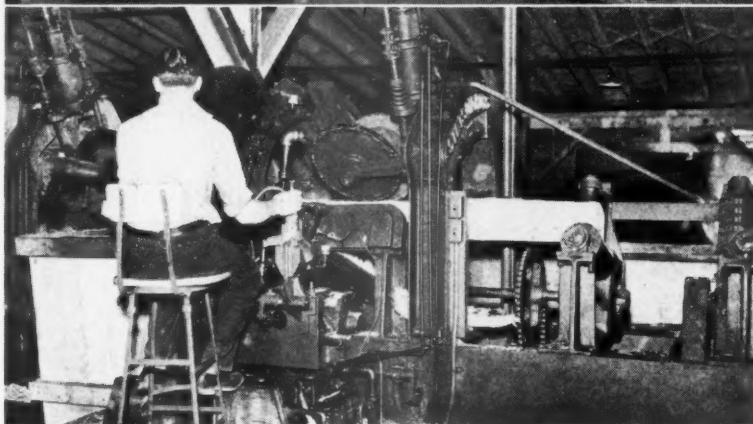
The CO₂ recorder operates in connection with a gas analysis cell cabinet and the principle of measurement is based on the thermal conductivity of flue gases. This apparatus operates entirely from alternating current and conditioning of the gas prior to analysis consists merely of saturating it, eliminating the need for any drying train. The range of the CO₂ recorder is 0 to 20% and this instrument together with the temperature recorder is mounted on a single panel located directly in front of the boiler.

AT THE TOP, band saw and carriage in the log breakdown plant.

THEN, cleaning the bark and dirt from 10-foot cants with a modern Stetson-Ross automatic barker.

NEXT, comes the chipping of the large cants.

PARTING OF THE WAYS, with the chips, on the left going to the digesters and the waste wood, on the right going to the boilers.



Expanding the Acid Plant

A complete new tower system was erected by the G. D. Jenssen Company adjoining the old towers in space provided in the original plans. The new acid plant for the two new units operates independently of the old system as the different methods of cooking employed in the new plant requires special acid. The new Jenssen towers are 96 feet high and 11 feet 6 inches in diameter, of concrete, and tile lined by the Stebbins Engineering & Manufacturing Company, who also lined the new rotary sulphur burner and the new concrete cooler pond which is mounted over the old one. This new rotary sulphur burner, made by the Sumner Iron Works,

is 5 feet in diameter and 16 feet long. This is said to be the first time that a single rotary burner has been employed to make acid for 250 tons or more of sulphite pulp per day.

Separate SO_2 recording equipments have been provided for independent analyses of gas from each burner, the new and the old.

The recording instruments are Micro-max circular chart recorders having a range of 0 to 20% SO_2 and these units operate in connection with cell cabinets similar to those used for the CO_2 measurement previously described with the exception that in the case of the SO_2 analysis the gas is thoroughly dried before it enters the analyzing cabinet. The equipment operates entirely on alternating current and provides a continuous record of the SO_2 percentage to an accuracy within 0.5 per cent SO_2 .

The Chemipulp system was expanded to include the six new digesters and a new 32 feet in diameter spherical accumulator was installed and lined by Stebbins.

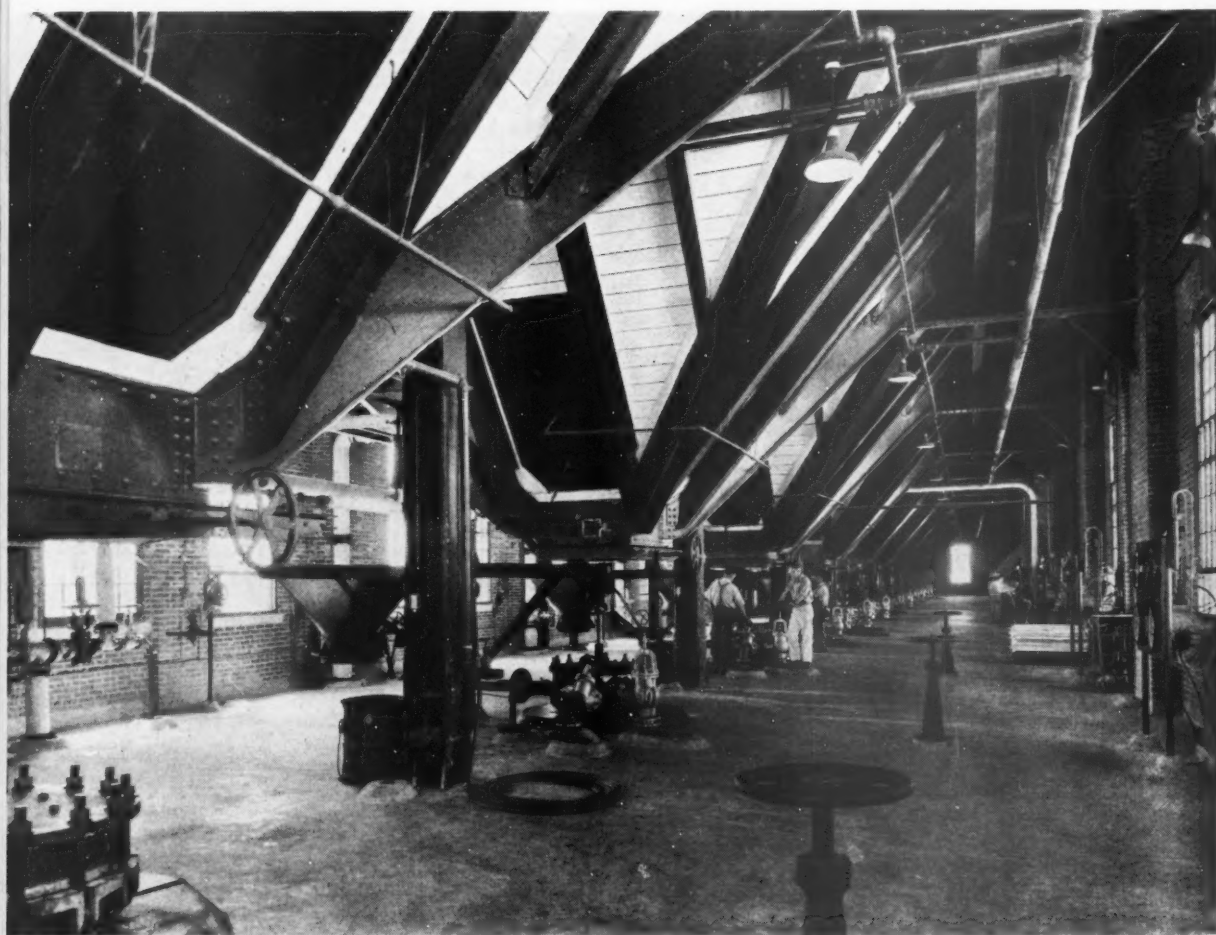
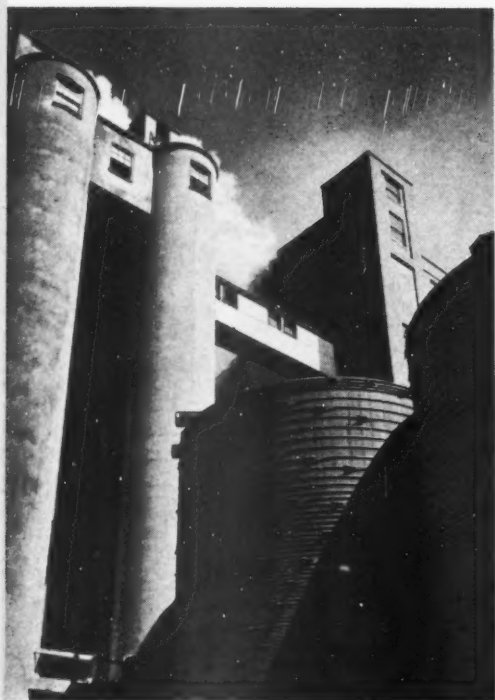
The New Cooking System

The two new Soundview producing units combined required six digesters making twelve in the entire mill. The new ones are the same size as the old ones but with different shaped top and bottom cones. All were lined by the Stebbins Engineering & Manufacturing

THE CAMERA records beauty of design.

AN EVEN DOZEN digesters in the picture below of the Soundview charging and operating floor.

ENDLESS—the ESCO stainless steel heaters appear to extend to infinity on the ground floor of the digester building pictured on the opposite page.



Company. The digesters are all equipped with circulating systems and heaters for indirect cooking of stainless steel made by the Electric Steel Foundry Company of Portland.

The six circulating systems in the new additions of the Soundview plant represent the most advanced installation of its kind, with several new features and improvements that make them of interest.

The circulating liquor is taken from directly behind the screens, which are located near the top of the digester, thru an outside pipe to the suction side of the circulating pump. On previous installations, part of this suction pipe was carried on suitable brackets, down the inside of the digester to the outlet fitting in order to reduce piping costs, since very light gage material could be used where the pressures on both sides of the pipe were equal. Placing all of the circulating pipe on the outside, permits a clear space inside the digester, below the screens, allowing clean blows and more regular inspection.

The arrangement of the suction pipe which is made of 18-8 SMO stainless steel plate permits the use of fabricated elbows having radii of about four feet. These exceptionally long radius elbows are an advantage, in that they provide flexibility of the pipe, thereby allowing some expansion and contraction to be taken care of and reducing friction losses. To provide for additional expansion and to take care of any vibration

the suction pumps and heaters are mounted on spring supports.

New type circulating screens are used, offering several important advantages. The screens are made in sections and are held in place by two support rings having a Z-bar section which permits the screen frames to be slid around the circumference of the digester into place and eliminates the necessity of bolting each frame to the digester and to each other. Each section of the screen is made up of a cast frame to which is clamped a perforated 18-8 SMO stainless steel plate. These plates may be removed for cleaning without removing the screen frame.

Spare perforated plates may be kept on hand to use while cleaning plates which may become limed up or plugged. The use of the thin removable plates gives the advantage of smoother holes which are less apt to plug, a smoother surface exposed to the chips and are very much more easily cleaned. Previously these screen sections were completely cast with cored holes.

Between the outlet fitting and the upper end of suction pipe an angle valve is used instead of a globe valve which allows the suction pipe to pass thru the test floor as near the digester as possible, thus conserving floor space.

In this installation the pump and heater are placed as low as possible in order to get the maximum suction head on the pump and to have the pump dis-

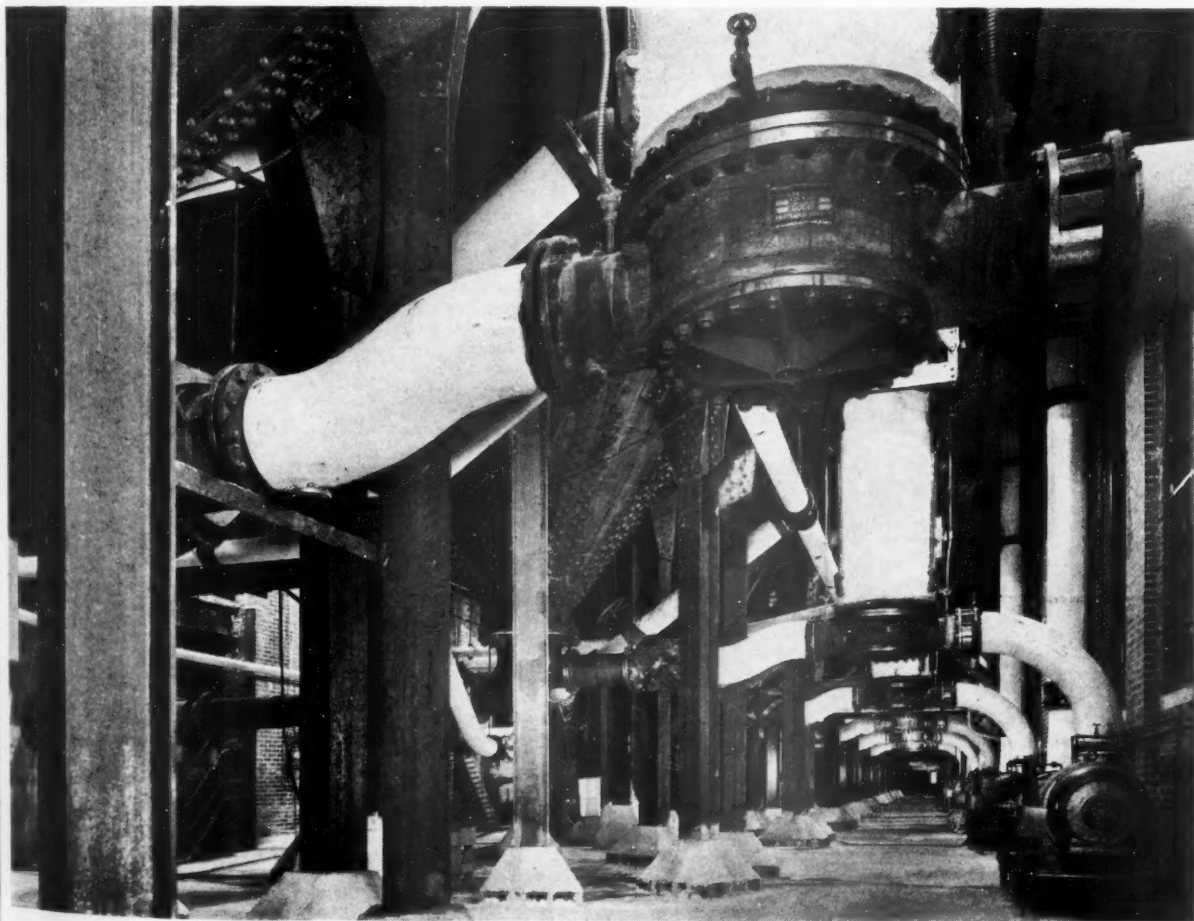
charge near the heater to eliminate all possible friction losses between the pump and heater, thus maintaining the maximum velocity thru the heater tubes.

The heaters used in this installation are of the two pass type which allow the use of comparatively short tubes. The tubes are made of 18-8 SMO stainless steel and were furnished by the Republic Steel Corporation. Owing to the great difference between the coefficients of expansion of stainless steel and mild steel, these heaters are provided with a full floating upper tube sheet which eliminates the necessity of a stuffing box and gland in the heater shell.

The hot liquor pumps each have a capacity of 3400 gallons per minute. They are especially designed for circulating hot acid under pressure and are provided with a special high pressure water seal to prevent any leakage of acid as well as being equipped with suitable ball bearings which are water cooled. Each pump is driven by a 125-h.p. 2200 volt Fairbanks-Morse motor.

These circulating systems provide a complete turnover of the cooking liquor in each digester every $13\frac{1}{2}$ min. or about 4.4 turnover per hour.

All metal used in these systems, in contact with the cooking acid, is made of Esco (Electric Steel Foundry Company) alloy 45 Steel Castings or of 18-8 SMO Stainless Steel Plate. Esco Alloy 45 is a chrome-nickel-molybdenum alloy which has proved very successful in the sulphite pulp mills of the Northwest.



Digester Instrumentation

Shortly after the plant started operations under the present management in 1934, steps were taken to put the digesters under complete automatic control.

This policy has been followed as the successive units were installed, with the result that the control equipment on all digesters is substantially the same, though provision has been made by applying especial equipment on some of them to give the greatest possible flexibility from a production standpoint. In other words, while the basic equipment is the same throughout, provision has been made which permits operation of different groups of digesters on different production schedules simultaneously.

All of the control equipment on the digesters as well as on the two accumulators was supplied by the Foxboro Company, of Foxboro, Massachusetts.

Acid of a controlled temperature is pumped to the digesters, and at the end of the circulating period in the Chemipulp pre-circulating system, full penetration of the chips has been so nearly achieved that the charge has reached a sufficient degree of uniformity to make use of time control feasible, whether direct or indirect method of cooking is being followed.

In addition to the steam flow recorder, each digester in the entire battery of is equipped with a Time Flow Stabilog Controller for use when on direct cooking.

In addition, digesters 6, 7 and 8 are specially equipped with Time Temperature Stabilog Controllers, to control temperature of the acid as it leaves the heat exchangers.

Pressure in each digester is maintained

with a Pressure Recorder-Controller actuating a Stabiflo valve in the top relief line.

Viewed by the management as one of the most important phases of the instrument set-up is the Foxboro Liquid Level Recorder on each digester, which gives an accurate record of the height of the acid during all stages of the filling, pre-circulating, and cooking operations.

To summarize, the cooks have for their guidance continuing records of digester temperatures, inlet and outlet acid temperatures in the heat exchanger, record of liquid level, record and control of digester pressure through top relief, record of steam flow, either on direct or indirect cook, and automatic time control of steam flow or of acid temperatures, as occasion demands.

Each of the two accumulators is equipped with a Foxboro Liquid Level Recorder, and automatic control of temperature and pressure is maintained with Recorder-Controllers actuating Stabiflo valves on the steam to acid heater and on pressure relief respectively.

Exact knowledge of the level of the acid is especially important during the side-relief period and these instruments not only provide a continuous record in a convenient location, but are entirely free from the troublesome surging prevalent in sight glasses heretofore generally used for this purpose.

The temperature recorders on the digesters are Micromax round chart recording instruments of the potentiometer type using thermocouples as primary elements. At the same time that instruments on digesters 10, 11 and 12 were installed this year, the old digesters were also equipped with similar instruments. As the installation now stands, the old digesters 1 to 6 inclusive each have single point recorders with a range of 50 to 150° C. and these instruments measure the temperatures of iron constantan thermocouples installed in the digesters. These six digesters are of the direct steaming type.

In January of this year digesters 7, 8 and 9 were put in service. These are of the circulating type. The temperature recorders installed on these digesters consist of two Micromax round chart recorders, one for the heater and the other for the digester.

The range on both instruments is 50 to 150° C. with one degree divisions of the dial. They are of the potentiometer type utilizing iron constantan thermocouples as primary elements.

The instrument recording heater temperatures is of the same type as that used for temperature measurements in the boiler house in that inlet and outlet temperatures from the heaters are measured on the same instrument and recorded as a band whose width represents the difference between the two temperatures. The thermocouple installed in the outlet from the heater is of the duplex type, that is, there are two thermocouples in the same well, one of these being connected to the recording instrument just described. The remaining thermocouple and its use will be discussed later.

The recorder on the digester is a single point instrument and will continuously record the temperature of any one of three points, as desired. That is, there is a switch mounted in the case of the instrument operated from outside of the case and this switch is connected to three

thermocouples installed in the top, center and bottom of the digester. The cook can check any one of these three temperatures by operating the switch and may also select the particular thermocouple to be used throughout his cooking cycle.

Each of the thermocouples in the digester is of the duplex type as described for the thermocouples in the outlet of the heaters.

On the digesters put in operation in June, namely numbers 10, 11 and 12, the temperature recorders installed duplicate those installed for digesters 7, 8 and 9 just described.

The spare thermocouples in the heater outlet and in the digesters are connected to a bus bar board, wired up to the four point Micromax strip chart temperature recorder mounted on the same floor with the other recording instruments. This recorder has a range of 0 to 200° C. and is used for an overall check on any digester and its heater, that is, any unit from 7 to 12 inclusive. If it is desired to check the operation of any digester and its heater the thermocouple connections to the unit in question are completed to the recorder by setting up the proper combination in the bus bar board and the strip chart instrument placed in operation. On a single chart will be recorded successively the temperature from the outlet of the heater and the three digester temperatures, these appearing on the chart as dots and numerals in different colors. It is to be noted that the thermocouples used during this test electrically have no connections whatever to the thermocouples connected to the round chart Micromax recorders operating at the same time on the digester and heater. The test using the strip chart instrument in no way interferes with the cook or his control of the digester.

Due to the fact that all temperatures are registered on a single strip chart the efficiency of circulation can be determined at a glance and the cooking cycle steadily followed.

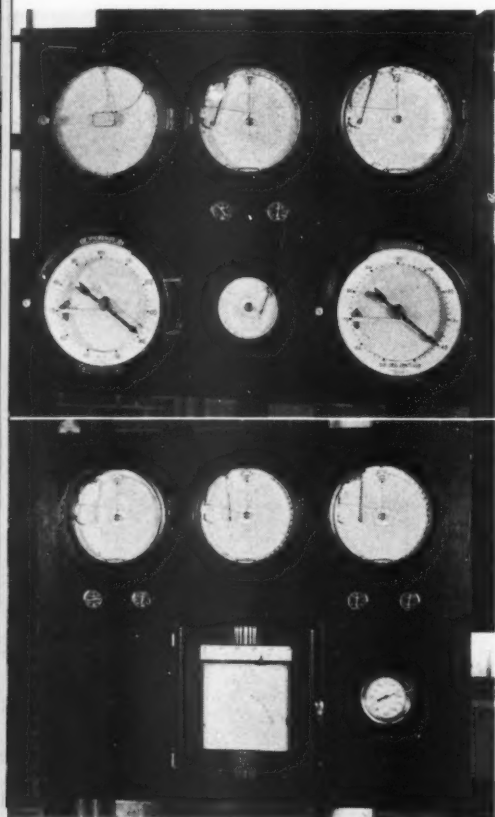
With the installation on digesters 7, 8 and 9 a separate Micromax round chart recorder together with a ten point rotary selector switch was installed on the same floor with the temperature instruments. This recorder is used to detect leakage into the condensate from the heaters. A sample of condensate from the heater is led to a cooling coil

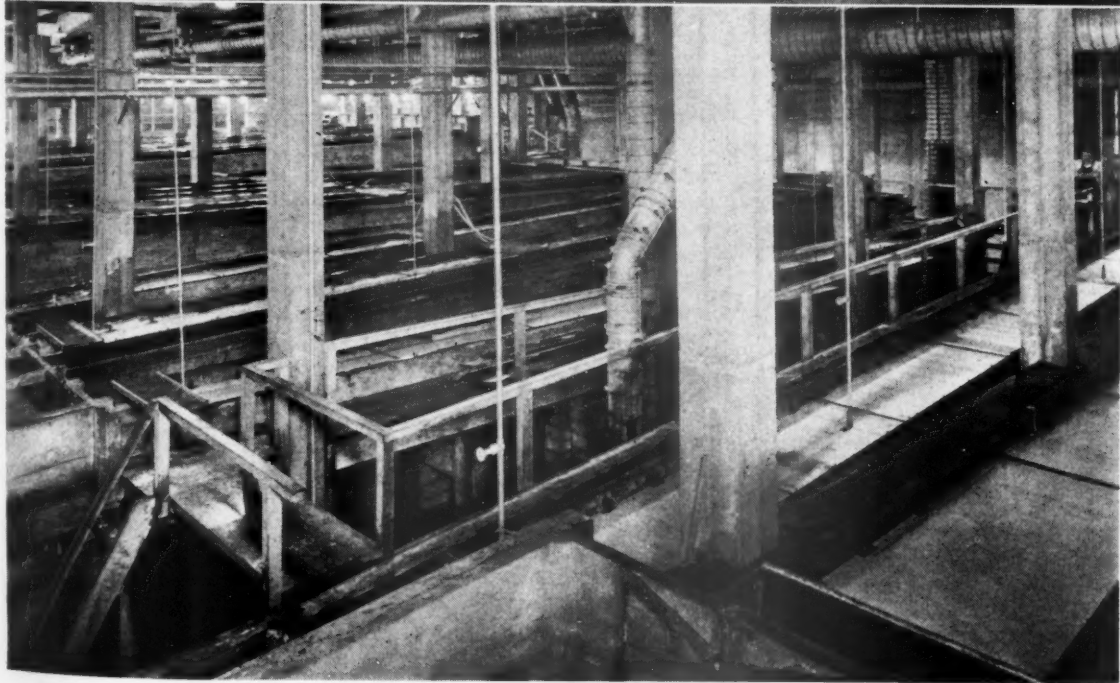
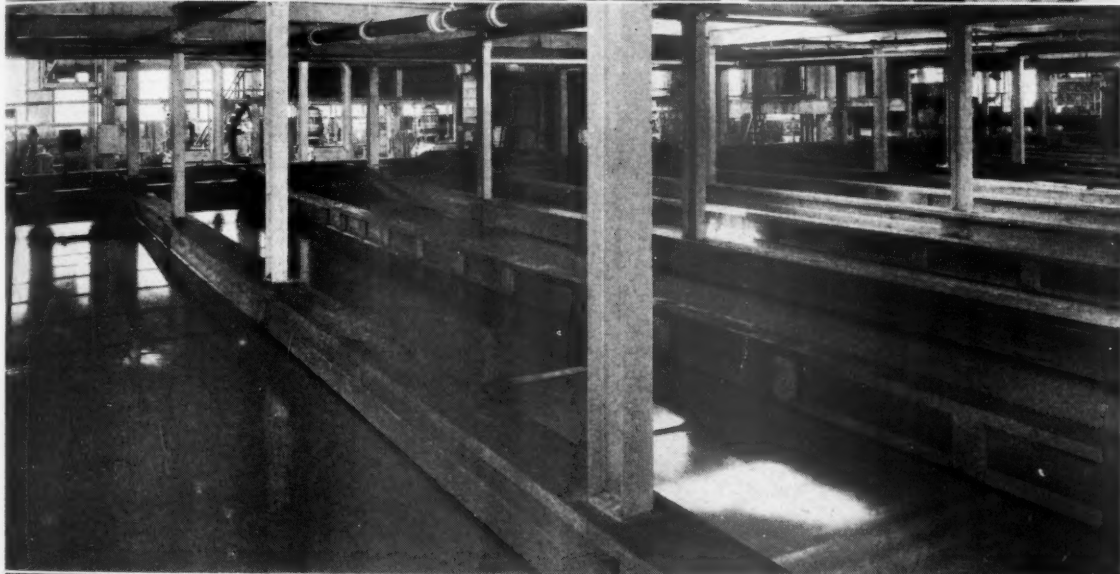
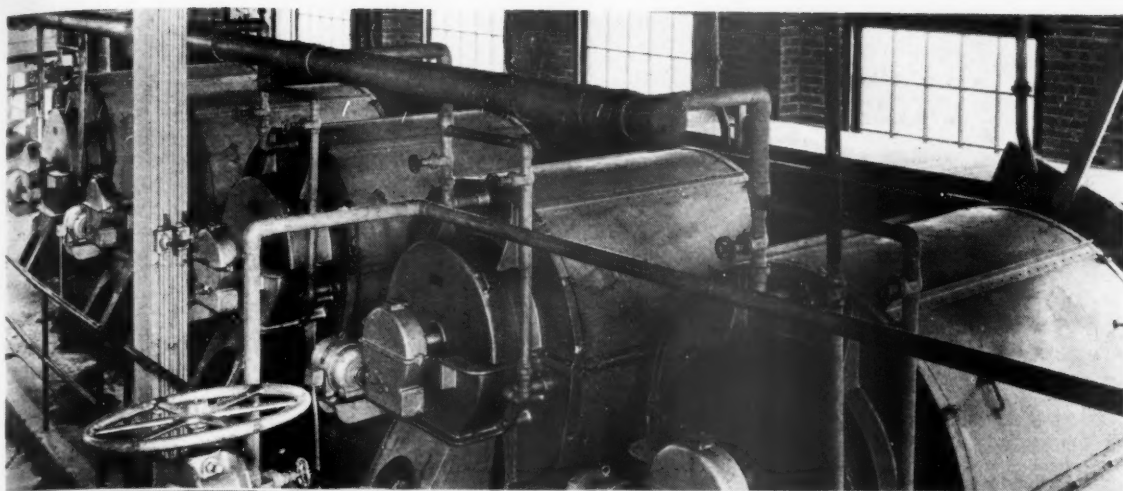
COMPLETE CONTROL of cooking is indicated by the instruments at the left controlling one digester >>> Twelve of these panels give Soundview mastery of the cooking processes.

FIVE Impeco knotters appear at the top of the opposite page.

A PART of the new riffler installation with the new bleach plant in the background.

EIGHTY-FOUR Impeco bronze vat flat screens are pictured at the bottom >>> Note the inclined installation giving gravity flow from one line to the next.





and thence to a chamber in which the conductivity cell is mounted. The cell consists of a pair of electrodes and the measurement is based on the resistance across the electrodes which is influenced by the purity of the condensate.

Originally four conductivity cells were installed, one in the common return line from the heaters and one in each of the individual returns from heaters on digesters 10, 11 and 12.

The recorder is also equipped with a pair of alarm contacts so that when the concentration reaches any previously determined adjustable point an alarm will be sounded warning of leakage.

Normally the condensate has a very high resistance and the rotary selector switch is set in the position so that the instrument is connected to the common return from all of the heaters. Leakage of any acid into the condensate results in an appreciable decrease in resistance with the result that the alarm will sound. An operator merely rotates the switch

to the individual heater return positions and the one on which the alarm continues to sound indicates the heater in which the leak has occurred.

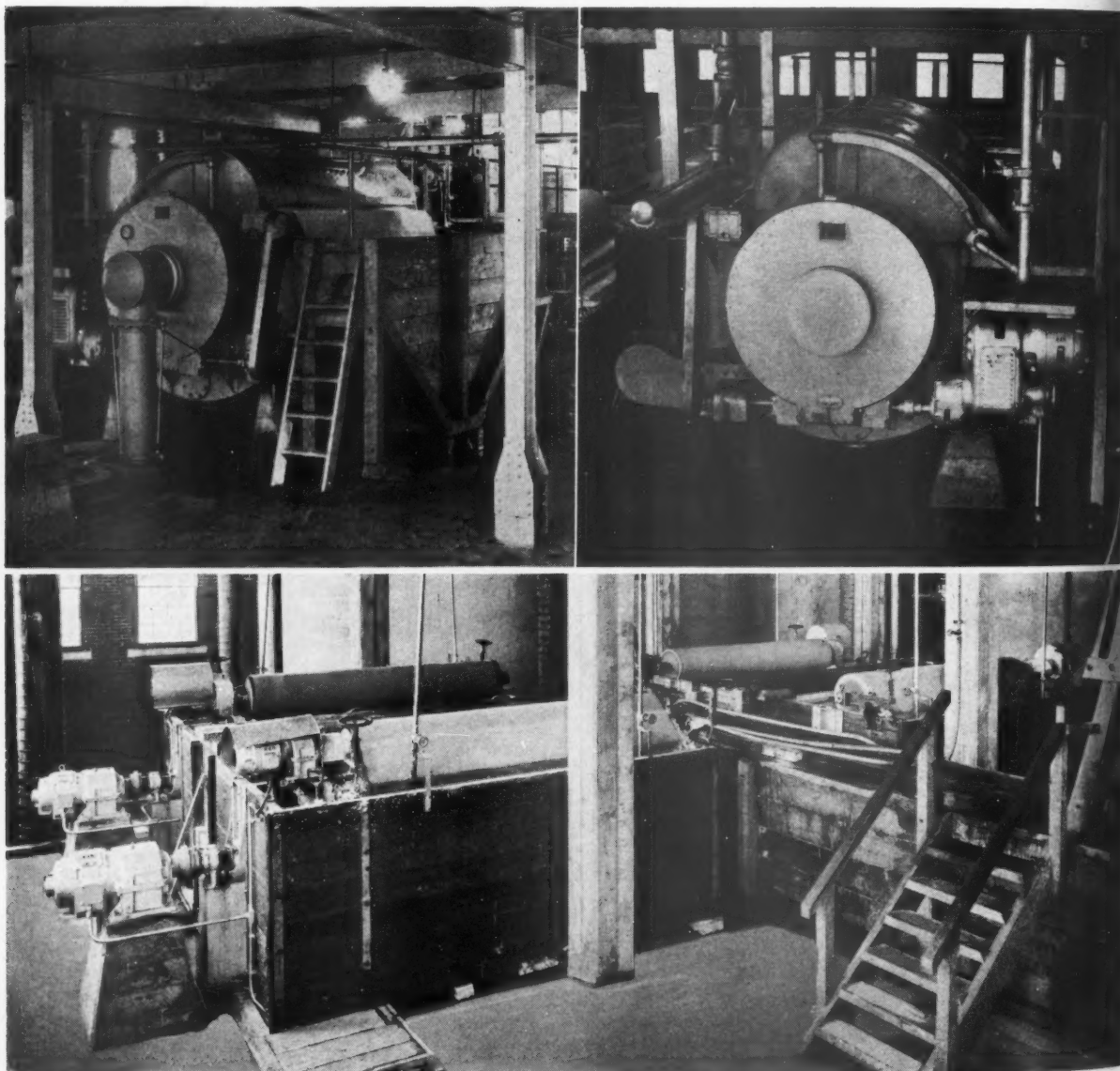
TWO OF THE SIX Oliver-Young stock washers and thickeners in the new units are shown directly below >>> On the left is the 6x10 foot Oliver-Young washing after the knotters >>> On the right is the 6x10 Oliver-Young final washer after the third stage of bleaching.

LATEST TYPE unbleached stock Impeo deckers, four of them, with bronze moulds and stainless steel facing wire are shown in the bottom photograph.

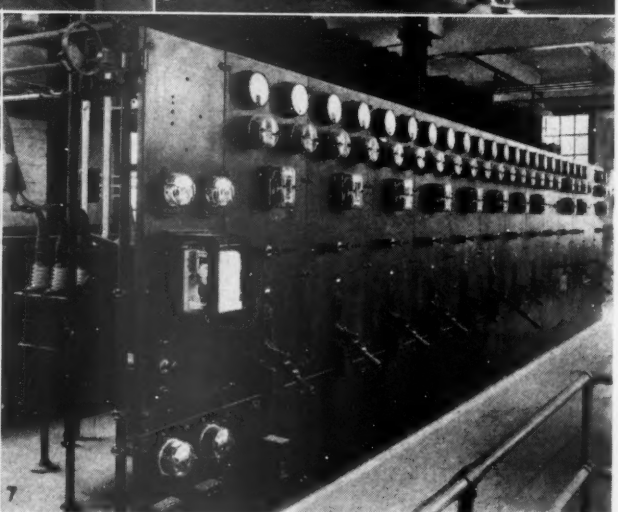
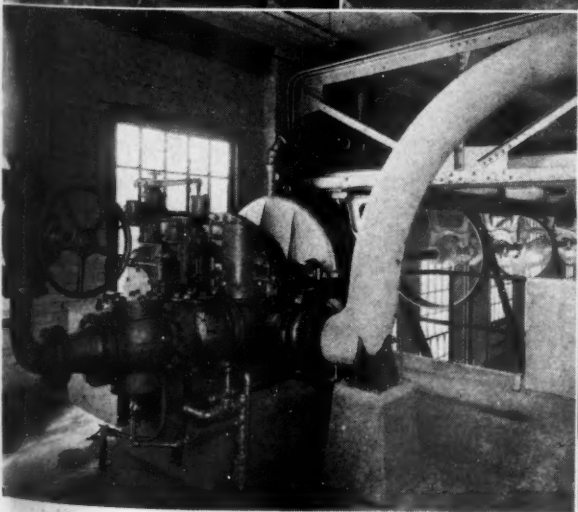
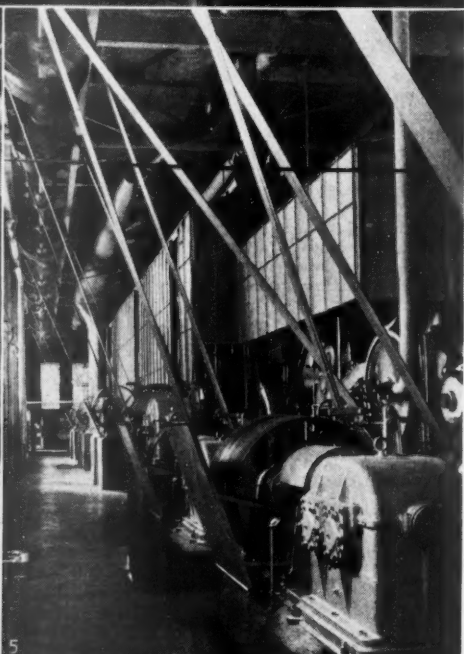
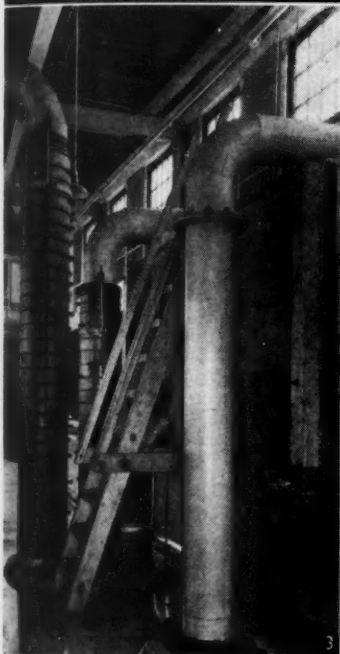
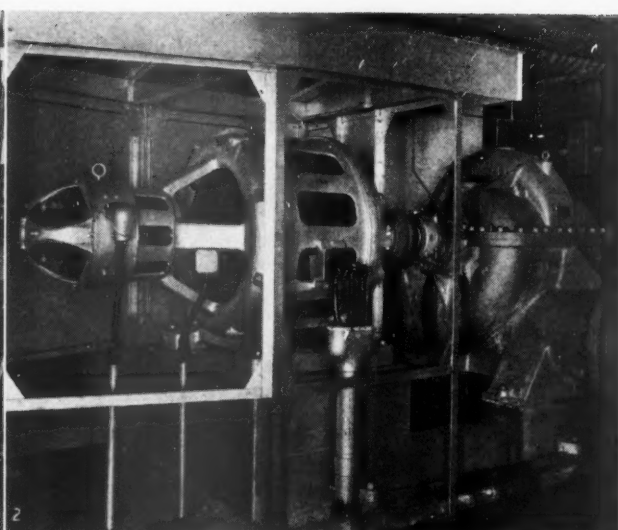
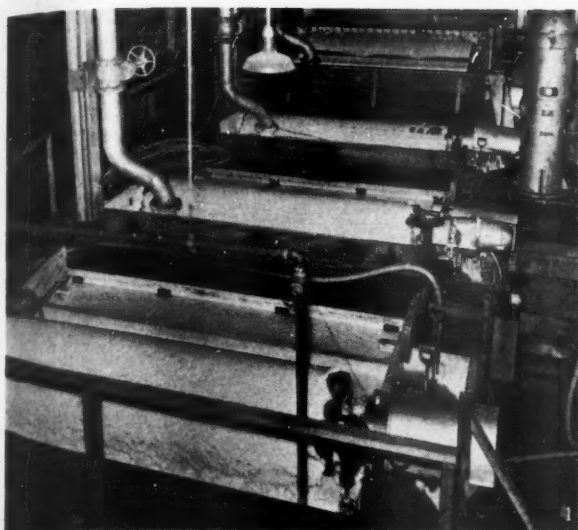
IN NO. 1 appears the three-cylinder Impeo bleach stock re-washer following the final Oliver-Young in the background >>> No. 2, A 350-H.P. 600 R.P.M., Westinghouse synchronous motor direct connected to a large white water pump.

ELBOWS of Everdur bronze keep Soundview's clean pulp clean in all stock lines (No. 3) >>> The new 848-H.P. boiler appears in No. 4 >>> Each of the two new pulp drying machines is equipped with a mechanical drive driven in seven sections by the 250-H.P. General Electric turbine shown in No. 6.

The Westinghouse equipped main substation switchboard and feeder distributing panels appear in No. 7 >>> All of the 2400-volt power entering the mill from the lines of the Puget Sound Power & Light Company passes through this switchboard.



Y



Screening

From the wood lined concrete blow pits, which have stainless steel bottoms, the stock goes to the Impco knotters. These are rubber lined, have stainless steel plates and bronze rotors. They are individually driven with the 2-hp built in motors.

From the knotters the unbleached pulp flows to two 6x10 feet rubber covered Oliver-Young washers where the pulp is thoroughly washed to remove excess acid. Pulp is discharged at 3 per cent to the unbleached rifflers.

Soundview's new units have large riffle capacity as will be noted in the photograph.

The new flat screens consist of 84 fourteen plate Impco bronze vat flat screens equipped with Dunbar drive. All eccentric and line shafts have SKF ball bearings. Drives are 10-h.p., 1200 r.p.m., Fairbanks-Morse motors through V-belts. Flow boxes are of deep swamp tank stock cypress.

All screen plates in these 84 screens are chromium plated with Crodon plate by the Chromium Corporation of America. The entire Soundview flat screening system now consists of 168 flat screens with 2,352 screen plates, of which two-thirds in the old mill and all in the new screens have been Crodon chromium plated.

The brown stock screens discharge into four, 42 inches in diameter by 120 inches face, Impco open cylinder type deckers. These deckers have wood vats, bronze cylinder moulds and stainless steel face wire. Each one is driven by a 5-h.p. Westinghouse gearmotor.

The couch roll is 20 inches in diameter and has an 122 inch face. It is driven by an individual 1-h.p. motor, a specially designed motor developed for this purpose by Westinghouse. It is called an "elevator type" motor, and has

about 17 per cent slip, so that the couch roll can be synchronized with the cylinder roll with the varying thicknesses of the pulp sheet.

The white stock screens discharge into four 48 inches in diameter by 144 inches face Impco deckers, similar to the others, except that they are driven by 7½-h.p. Westinghouse gearmotors.

New Bleach Plant

The new Soundview bleach plant operates on a three stage batch cycle, consisting of direct chlorination and two hypochlorite stages. The process equipment, which was supplied by the Pulp Bleaching Company, comprises three chlorination units, six high consistence bleaching units and ten low consistence bleaching units.

The chlorinators and high consistence bleachers were designed for six air dry tons batch capacity each, and the low consistence units for nine tons each. All the reaction units are equipped with the new type vertical drives and all operating mechanisms are rubber covered. All gear drives for the bleaching equipment were manufactured for the Pulp Bleaching Company by the Western Gear Works of Seattle.

Chlorine and caustic soda for all of Soundview's bleaching operations is supplied by the Pennsylvania Salt Manufacturing Company of Washington from the company's plant in Tacoma. Penn Salt's chlorine dispersion method has been used in Soundview's original bleach plant since 1935.

Oliver-Young washers wash the stock after each bleaching stage. The chlorinated pulp is pumped directly from the chlorination cells, diluted with white water, and sent to a 6 by 10 foot Oliver-Young washer. Fresh water showers are used. Washed pulp is discharged to a

chest and pumped to a 6 by 10 foot Oliver-Young high density thickener. This thickener is of cast iron construction throughout, rubber covered, and is equipped with three, 17½ inches in diameter, cast iron rubber covered press rolls. Pulp is discharged through a shredder and a double screw conveyor at the proper consistency for the high density bleach cells.

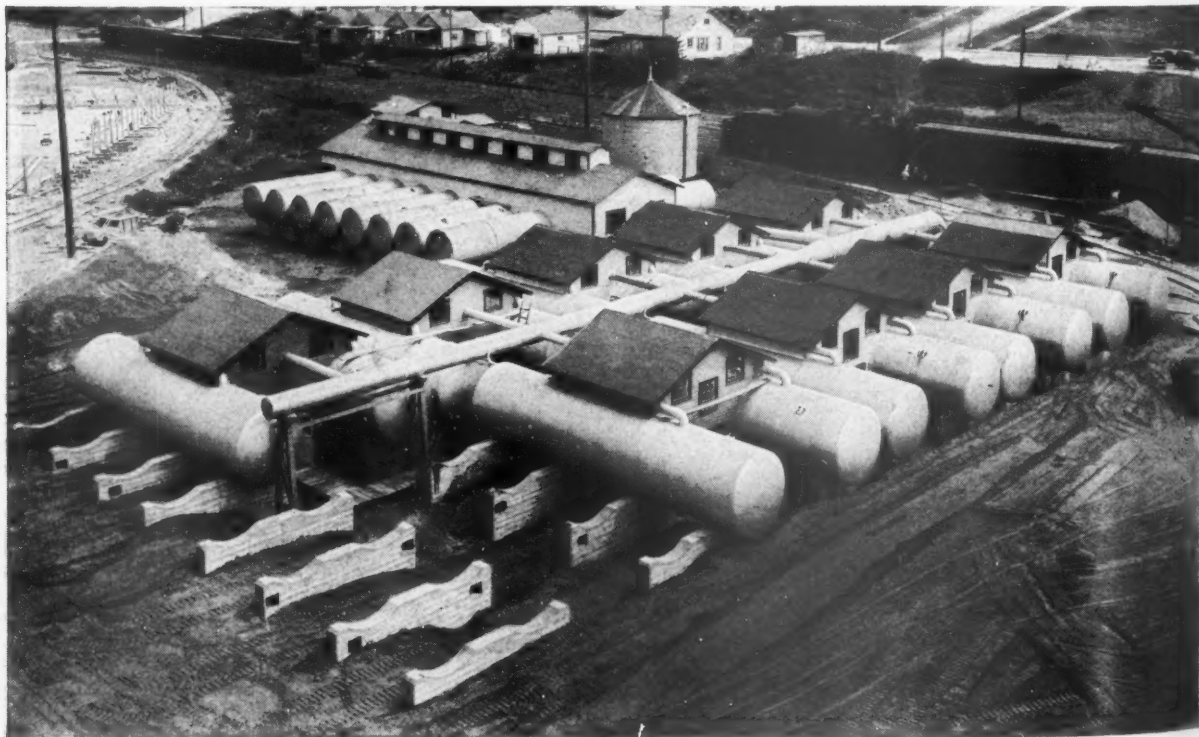
After the second stage high density bleaching and after the third stage low density bleaching the stock is also washed on Oliver-Young washers.

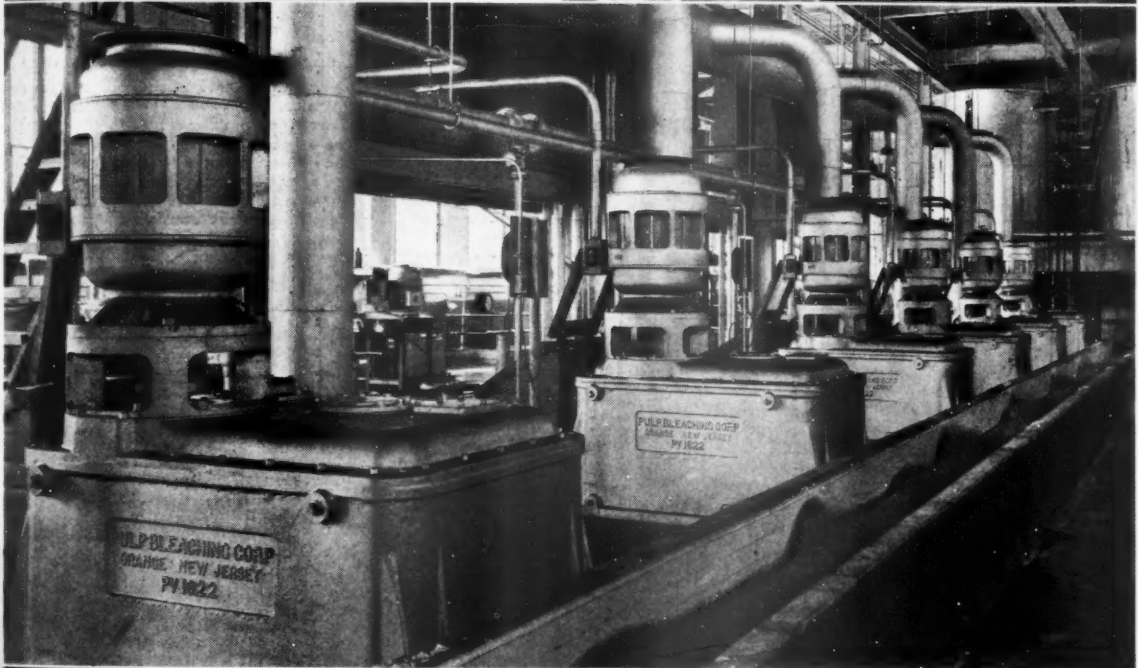
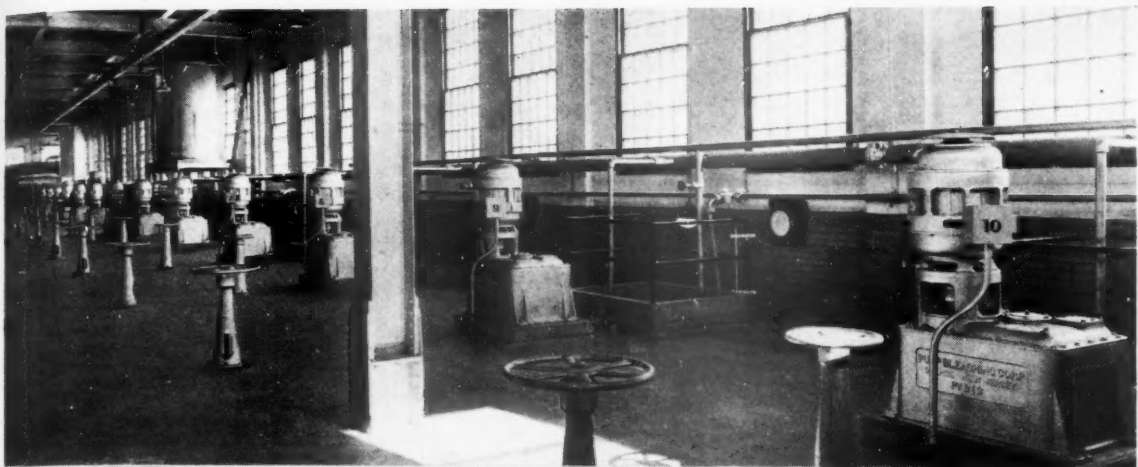
Following this final Oliver-Young washer is a three stage, 42 inches in diameter, 120 inches face, Impco re-washer. Each cylinder is driven by a Westinghouse 5-h.p. gearmotor, and each agitator in between the cylinders has 3-h.p. gearmotor of the same make. The couch roll drive is the same 1-h.p. elevator type motor drive as on the other deckers.

Modern recording instruments contribute to uniform bleaching. A Micromax recorder is used to measure the pH of the stock after caustic addition. From the reading of this instrument the amount of caustic added is adjusted manually to keep the pH value within certain limits on the recorder. The range of the instrument is 6 to 12 pH. All

42,000,000 gallons per day is the capacity of this pressure water filter plant designed by the Shibley Company.

NEW TYPE bleach cell drives shown on the opposite page with the new bleach plant instrument control panels showing in the bottom picture.





cells are equipped with temperature recorders.

All bleach cells are lined with vitrified glazed tile laid up in a specially treated joint to withstand the chemical action of the various cells. The open screw conveyor was lined with white glazed tile to prevent the stock from touching concrete. All lining work was performed by the Stebbins Engineering & Manufacturing Company.

The dump chests are located in the basement under the bleach plant which is actually the ground level floor of the plant. Large and separate dump chests are used for each stage of processing. They were lined with vitrified tile lining by Stebbins.

The installation of 60,000 square feet of tile in these dump chests is indicative of the policy of Soundview to produce nothing but the highest grade of bleached sulphite pulp.

Agitation in the dump chests is provided by propeller type horizontal agitators, rubber covered or of stainless steel. There are 19 of these units. The individual units of one propeller per shaft have 20-h.p. Westinghouse gear-motor drives, while the double propeller units have similar motors of 40-h.p.

The New Machine Room

The new machine room, formerly the warehouse, is now a part of the original machine room and all four pulp drying machines are operating side by side. Two new drying machines were purchased from Rice, Barton & Fales, Inc., of Worcester, Massachusetts. They are 154 inches wide, have wires 75 feet 3 inches long and each has two rotating suction boxes. Shakes are built in for use if and when required.

The wire section of each machine is equipped with a suction couch roll built by the Beloit Iron Works. Each machine has 44, five feet in diameter, drying cylinders with pinch roll arrangement to provide maximum contact on the pulp web with the dryer roll surfaces. The machines are each driven by a variable speed 250-h.p. General Electric turbine mounted on a balcony. Drives are mechanical through the turbine driven line shaft and belting to enclosed type Rice, Barton & Fales hypoid reduction units and equipped with magnetic clutches. Clutch energy is supplied by a Westinghouse motor-generator set. The line shafts, the seven hypoid gear units on each machine and the pillow blocks are all equipped with SKF bearings. Tables rolls on the machines are set in SKF ball bearings.

The heating and ventilating systems were supplied by the J. O. Ross Engineering Company and include the transite hoods over the machines which have adjustable aprons.

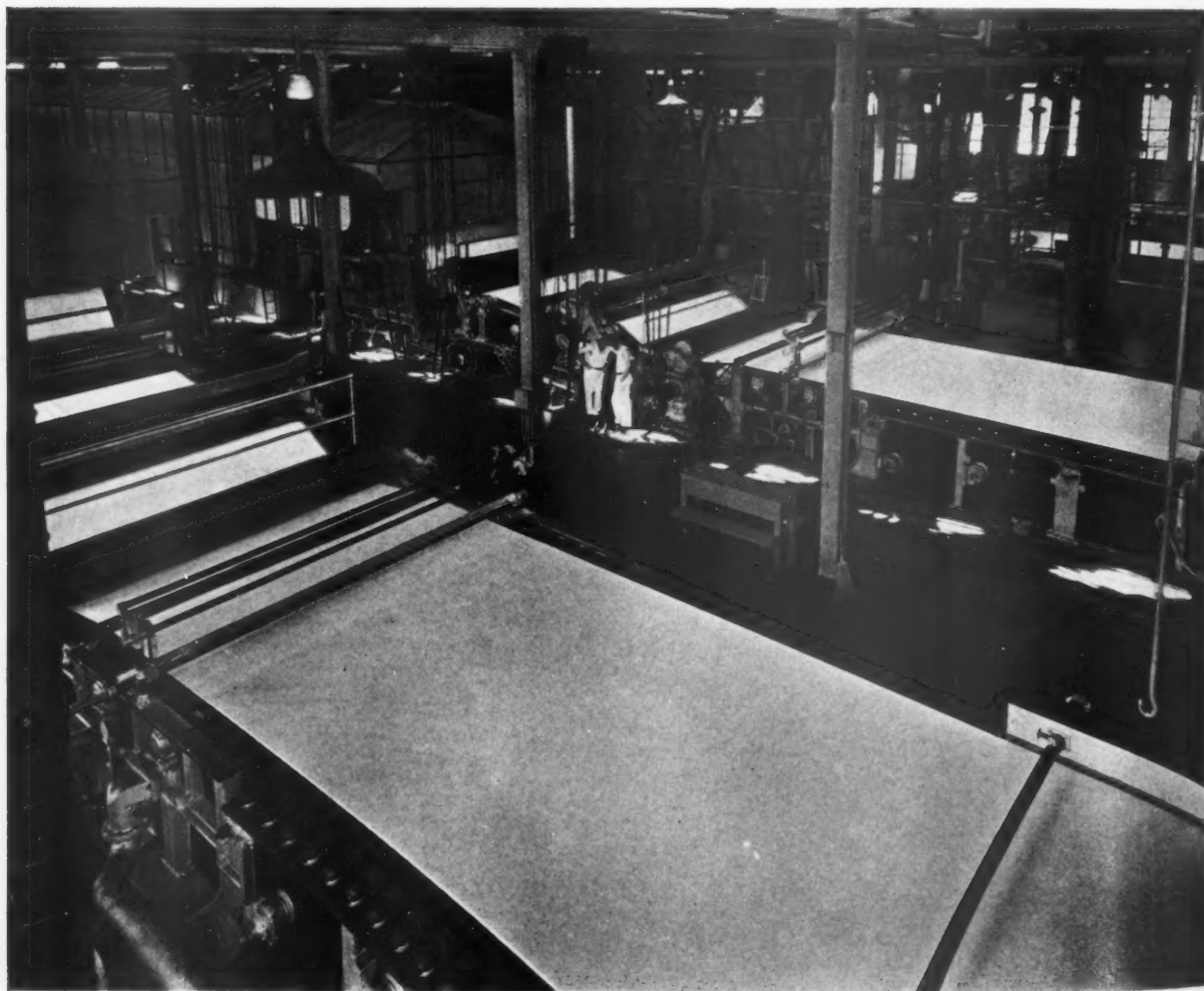
Wire pits were lined by Stebbins with white tile to prevent the formation of slime in the white water systems and to eliminate dirt. Two new 600 tons capacity Southwark baling presses were purchased for the machines.

The new pulp storage warehouse is of brick and structural steel with concrete floors. All of the production is handled in skids taking 16 bales each. Elwell-Parker electric trucks handle all pulp coming from the four machines, high-piling it in the warehouse, trucking to the ships and loading in freight cars.

The Enlarged Filter Plant

The Soundview water supply is received from the City of Everett and is delivered to the filter plant at 150 pounds pressure. It is there reduced to 90 pounds and after filtration enters the mill at about 75 pounds pressure.

The entire water filter plant, both old and new units, was designed by the Shibley Company of Seattle. The pressure type filter plant consists of 12-8 feet in diameter and 31 feet long, pressure fil-



ters installed in 1930; 4.8 feet in diameter and 32 feet long filters installed in 1935; 12.9 feet in diameter and 43 feet long filters installed in 1936; and 6.9 feet in diameter and 43 feet long filters installed in 1937.

Provision has been made for an additional four filters. All of those installed are of the double back wash type, and are equipped with a combination electric-hydraulic control for convenience of operation. Provision is made for the feeding of coagulants when seasonal conditions make it necessary. The back wash tank, of twenty-six thousand gallons capacity, is mounted on a forty foot tower, provides the reserve supply of clean filtered water for back washing.

The total capacity of the Soundview water filter plant as now installed is forty-two million gallons per day.

Interesting Features

In designing the new digester building Soundview had the comfort of the operators in mind. A separate ventilating fan was installed for each digester, with a capacity of 3,000 cubic feet of air per minute per fan. With all 12 fans in operation 36,000 cubic feet of air can be discharged per minute, affording the operators the very best of working conditions.

This same method of ventilation has been provided to guard against fumes in the bleach plant.

All switchgear, panels and gearmotors were furnished by the Westinghouse Electric & Mfg. Company.

The machine shop was extended to include a carpenter shop, paint shop and oil house. A building, 80 by 160 feet, was constructed to house all construction supplies as well as to be a permanent storage building for spare parts and miscellaneous supplies for various equipment. It is of structural steel with a concrete floor and galvanized iron roof.

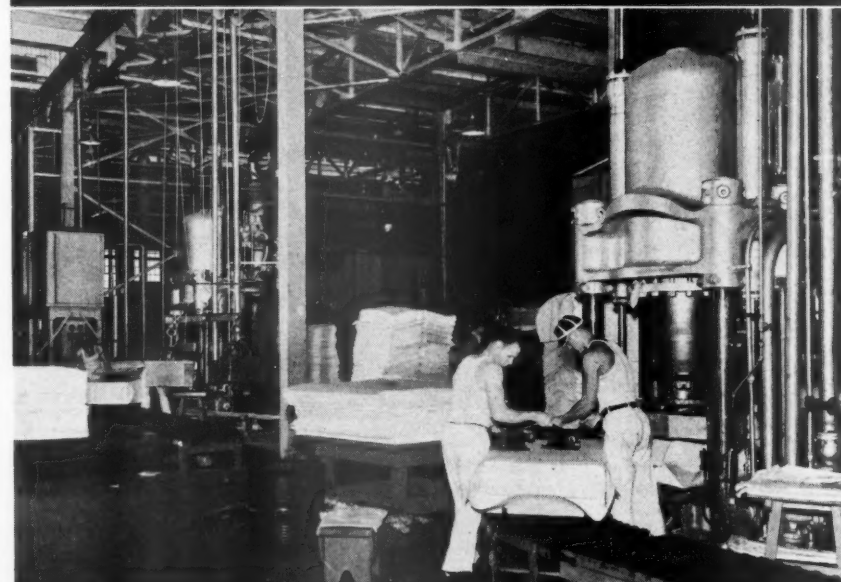
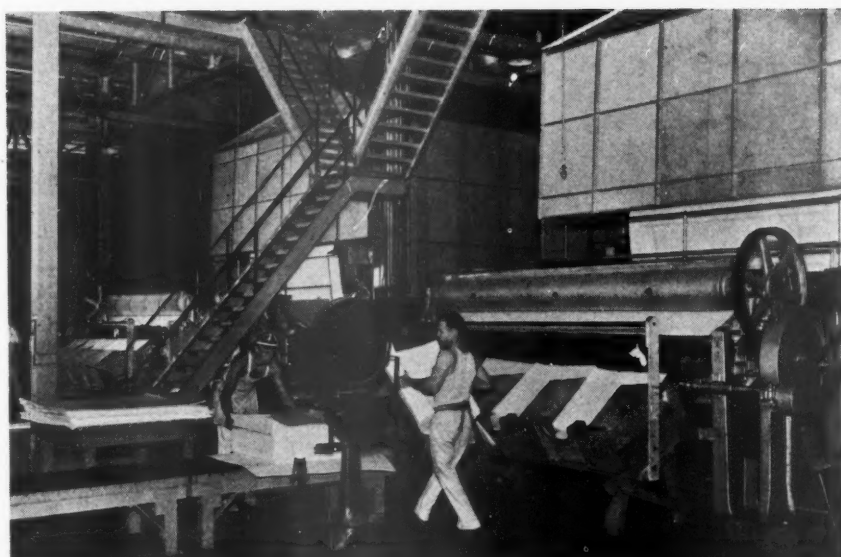
With the completion of the two new production units, Fairbanks-Morse & Company now have over 350 electric motors operating in the mill and totalling approximately 10,000 horsepower. There are almost 2,000 horsepower in the second and third units distributed among the 10 forty h.p. 1800 r.p.m. motors; the 6 seventy-five horsepower 1800 r.p.m.

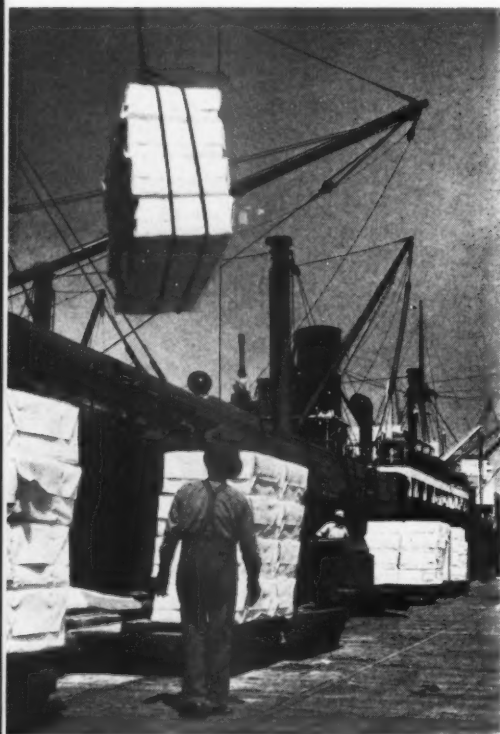
TWO OF A KIND are the new Rice, Barton & Fales pulp drying machines pictured on the page at the left. The two drying machines originally installed in 1930 appear in the background.

TAKING OFF from the two new drying machines at Soundview (top picture).

RAPID BALING and pressing is pictured in the second photograph.

EASY STACKING in the big, new warehouse with 16 bale skids and electric trucks.





motors; and, the 3 thirty horsepower 1800 r.p.m. motors.

Although Soundview produces all of its own steam no electric power is generated. All electric power is purchased from the Puget Sound Power & Light Company.

Cleanliness

In the second units and in the old mill, too, the Soundview organization gives constant attention to cleanliness of all processing equipment, realizing that clean equipment means a low dirt count in the finished pulp.

Several features of the new units bespeak this attention to cleanliness. Roughly 100,000 square feet of tile lining is employed to keep the pulp clean and prevent slime. This is exclusive of the digesters and accumulator linings.

Wood piping of Douglas fir is employed for stock and water lines with Everdur bronze fittings, Y's, angles and elbows used for their non-corrosive and long life qualities. These Everdur fittings were fabricated by the Alaskan Copper Works of Seattle.

OFF TO SEA from Soundview's dock >>> Fine quality bleached sulphite pulp for paper making, produced in the world's largest bleached sulphite pulp mill from Western hemlock grown in the forests of the Pacific Northwest.

OR BY RAIL from Everett, Washington, to the paper mills of the Middle West and the East. The Elwell-Parker stacks the baled pulp right in the freight car.

Where steel had to be used it was rubber lined. The knotters, it will be recalled, are rubber lined with bronze rotors and stainless steel plates. Flat screens have bronze vats and Crodon chromium plated screen plates. All valves are of non-corrosive material.

Slush pulp in the new plant does not come in contact with either iron or concrete at any point in the process.

Wood stock tanks and acid tanks are employed. Soundview has one of the largest wood tanks ever built, 50 feet in inside diameter and 32 feet deep inside with a capacity of 471,000 gallons. It is used for stock blending. The National Tank & Pipe Company of Portland, Oregon furnished the major portion of the wood tanks and wood piping. The acid tanks, 30 by 30 feet were erected of Douglas fir on the job by the same firm.

The wood piping in the new units differs from the usual design in that it is wrapped with individual steel bands instead of the ordinary wire wrapping.

Building Construction

The Austin Company, who have done a large amount of construction work for Pacific Northwest pulp and paper mills, was given the contract covering the construction of the main structures for the two new units and the installation of all machinery and equipment, power wiring and process piping. Austin worked closely with J. H. McCarthy, resident engineer, and Soundview's engineering department.

Construction was maintained on a high speed schedule with two shifts being worked through the period of constructing both units and three shifts were used on certain portions of the work.

An outstanding feature of the Soundview construction program was that, although it was a high speed job, it was completed exactly on schedule. Buildings were completed, machinery installed, wiring finished and all piping hooked up ready for the mill to start on the date set months before.

The size of the construction job is more easily visualized by examining the quantities of materials used and the number of man hours required for the construction

Reinforced concrete	18,000 cu. yds.
Common brick	1,400,000
Structural steel	1,650 tons
Reinforcing steel	900 tons
Total man hours	455,000

These materials and hours of work went into the following structures of the first unit: Digester building to house three new digesters; Blow pits building; Three story screen and bleach building; Miscellaneous work in the Machine Room, including foundations for the new drying machine; New pulp storage warehouse; Foundations for acid towers; Foundations for the filter plant; Reinforced concrete stock chests; Reinforced concrete Chemipulp accumulator housing; and miscellaneous work in the acid plant.

And in the second unit the above materials and man hours went into: Structure to house three additional digesters; Blow pit building; Work in the Machine Room building in connection with providing foundations for the second new drying machine and a number of miscellaneous changes; A further addition to the Pulp Storage building; Foundations for the second addition to the water filter plant; Additional stock tanks and a small amount of additional space in the screen room; and an addition to the Boiler House.

The main structure are of brick and steel construction to match the old plant. Structural steel frames were used throughout with brick pilasters and filler walls. The heavy foundations required a large amount of reinforced concrete as did the concrete bleaching cells which were built by the slip-form method. The floors throughout the mill are of concrete supported on structural steel and in most instances the steel is fireproofed. Foundations are all supported on wood piling.

With the completion of its expansion program the Soundview Pulp Company not only has the largest bleached sulphite pulp mill in the world, but it has, also, one of the most modern mills in design, construction, equipment and methods.

Soundview bleached sulphite pulp is known for its fine qualities by paper mills throughout the United States and in a number of foreign paper making countries.



More News On Fernandina Plans

Clyde B. Morgan Heads New Company

More detailed information is now available on the Fernandina Pulp & Paper Company of Fernandina, Florida. The announcement was made July 12th that interests associated with the Rainier Pulp & Paper Company, the Grays Harbor Pulp & Paper Company and the Olympic Forest Products Company, would construct an 185 tons per day wood pulp mill in the Florida town to utilize Southern pine, and that the plant would be ready to operate about August 1, 1938.

Later announcements state that the Fernandina Pulp and Paper Company is a wholly owned subsidiary of the Rainier Pulp & Paper Company of Shelton, Washington and that the Fernandina mill will be the first plant of commercial size designed to produce bleached sulphite pulp from Southern pine. While not definitely stated it is generally assumed that the product will be bleached sulphite pulp for rayon and cellophane purposes the product being classified as "dissolving pulps."

Although the new Florida company is a wholly owned subsidiary of the Rainier Pulp & Paper Company of Shelton, it appears, from the recent financial announcements of the Grays Harbor Pulp & Paper Company and the Olympic Forest Products Company that these two concerns have advanced money to Fernandina Pulp & Paper Company to assist in the starting of the project on which some \$700,000 had been spent up to August 10th.

"The Rainier Pulp & Paper Company is one of the world's largest producers of dissolving pulps (highly refined sulphite pulp sold for use in the manufacture of rayon yarn, cellophane, staple fiber, and other cellulose products) with mills located at Shelton and Tacoma, Washington. The Rainier Pulp & Paper Company also supervises the manufacture and sale of dissolving pulps produced by Grays Harbor Pulp & Paper Company and the Olympic Forest Products Company, with mills located at Grays Harbor and Port Angeles, Washington, respectively." The above quoted statement is from a recent announcement by the company.

The Central Engineering Department of the three affiliated mills, located at Port Angeles, Washington, has designed and will supervise the construction of the Fernandina Pulp & Paper Company Plant.

Clyde B. Morgan President

The president of the Fernandina Pulp & Paper Company is Clyde B. Morgan, who was vice-president of the S. D. Warren Company of Cumberland Mills, Maine prior to his joining Rainier Pulp & Paper Company shortly after the first of this year. Mr. Morgan was already familiar with these West Coast operations, having served as a director of the Olympic Forest Products Company during the period the S. D. Warren company held a large stock interest in that company.

The Fernandina company has a plant site of 177 acres and has acquired or made arrangements to acquire approximately 73,000 acres of timberlands close to the mill.

Preliminary engineering work on the site was done by A. J. Bennett, field engineer for the Central Engineering Department at Port Angeles. John Kiely of the Central Engineering Department, located for the past several years at Shelton, Washington, has been transferred to Fernandina as resident engineer in charge of the construction.

Dredging is already underway and piles are being driven for the necessary docks to receive shipments of equipment and supplies.

Equipment Selected

All equipment for the Fernandina mill is being purchased by the Central Purchasing Department for the Rainier Pulp & Paper Company, the Grays Harbor Pulp & Paper Company and the Olympic Forest Products Company, located in Seattle.

Up to August 10th the following equipment had been ordered for the new Fernandina bleached sulphite pulp mill.

The pulp drying machine is of the fourdrinier type, 134 inches in width, and is being constructed by Rice, Barton & Fales, Incorporated of Worcester, Massachusetts. The machine is rated at 185 tons per day capacity. The drive is of the mechanical type from a Westinghouse direct current motor direct connected to a line shaft. Power will be transmitted to the machine through belting to enclosed gears, which will be supplied by Rice, Barton & Fales, who will also supply the rubber covered suction press rolls.

The digesters are being constructed on the Atlantic Coast and will be lined by the Stebbins Engineering & Mfg. Company.

The entire acid plant is being designed by the G. D. Jessen Company. Boilers have been ordered from the Babcock & Wilcox Company and electric power will be produced by a General Electric turbine-generator.

Nash Engineering is supplying the vacuum pumps which are to be equipped with General Electric Motors.

Non-corrosive valves, fitting and circulating system piping will be furnished by the Electric Steel Foundry Company of Portland, Oregon.

Vacuum washers and thickeners have been ordered from the Improved Paper Machinery Corporation of Nashua, New Hampshire.

Flat screens have been ordered from the Bagley & Sewall Company of Watertown, New York, and will be of the Harman type. Pulp baling presses have been ordered from the Baldwin-Southwark Corporation.

Other equipment will be purchased shortly.

Fernandina Result of Rainier Research

The decision to construct the bleached sulphite pulp mill at Fernandina, Florida for the manufacture of rayon type pulps from Southern pine, came as a result of several years of research and experimental work in the laboratories of the Rainier Pulp & Paper Company at Shelton, Washington.

Rainier's laboratory is one of the outstanding research institutions in the pulp and paper industry (see PACIFIC PULP & PAPER INDUSTRY May 1936) being equipped with the finest equipment and manned by trained and experienced men. For several years the Rainier research organization has been studying the possible methods of producing bleached sulphite pulp from Southern pine, numerous carloads of pine having been shipped to Shelton for this purpose.

That their experimental work has been successful is evidenced by the decision to construct the sulphite mill at Fernandina.

In addition to this success in adapting the sulphite process to pine other factors influenced building in the South. Among these factors are, proximity to rayon yarn spinning mills thereby saving on freight, adequate low cost raw material, good water (from wells) and sufficient available labor.

In addition, being the first bleached sulphite pulp mill in the South, the Fernandina mill will enjoy exclusive advantages.

No announcement has been made as yet of plans for obtaining the additional funds necessary to complete the construction of the Fernandina mill. The pending reorganization plans of Rainier, Grays Harbor and Olympic Forest Products apparently does not provide funds for Fernandina construction, so it is believed that additional funds will be raised shortly.

Dobeckmun Buys Pacific Coast Plant

In July the Dobeckmun Company of Cleveland, Ohio, manufacturers of transparent cellulose products, purchased the Oakland, California plant of the Western Shellmar Products Company from the Crown Zellerbach Corporation. It will operate as a Pacific Coast branch of the Dobeckmun Company. New equipment will be installed to enable production of the parent company's entire line.

The Western Shellmar Products Company, whose plant was built in 1935 by the Crown Zellerbach Corporation, did not develop into an important factor in the Crown Zellerbach operations, hence the sale was reported to be unimportant. Western Shellmar's plant is equipped to produce plain and printed Cellophane bags, printed roll and sheet Cellophane.

Brooks Miller Passes In Los Angeles

Office manager, Harry L. Miller, of the Vernon plant of Fibreboard Products, Inc., lost his oldest brother, Brooks Miller, July 20. This was the third death in Mr. Miller's immediate family this year.

TAPPI Plans Fall and Winter Program

A Fall and Winter dinner meeting program which will embrace a broad list of interesting and informative subjects was recently announced by the officers of the Pacific Section of TAPPI, George H. McGregor, chairman; N. W. Coster, vice-chairman; and J. V. B. Cox, secretary-treasurer.

The first of the Fall dinner meetings will be held in Everett, Washington, on the evening of October 5th. The afternoon will be given to visiting the three mills in Everett. Details of the program including the speaker will be published in the September number of PACIFIC PULP & PAPER INDUSTRY.

Under the chairmanships of William R. Barber and Carl Fahlstrom the dinner meetings of the Pacific Section have become of major interest and importance to the men in the industry in the Pacific Northwest. It is now planned to further enlarge the service of these dinner meetings as Mr. Cox outlines in the following letter to this journal.

"The Pacific Section of TAPPI in planning the programs for the coming year, are enlarging their scope into the study of costs and personnel. This is to fill a well recognized need by those interested in the development and scientific work of the paper and pulp mills.

"In a few mills, and in some sections of the country, the relations between the cost accountants and the technical men are very close and well understood, but much can still be accomplished toward furthering the cooperation between these two vital departments.

"No new development, or for that matter, no old process is of much value no matter how good it might be from a scientific point of view, unless its costs can be worked out and held within the necessary limitations of the industry. It is necessary for the technical man to understand something of cost finding and cost accounting in order to translate laboratory findings into economical mill processes.

"It is also very necessary for the technical man to recognize that most important factor in production, the human element. No process or machine can be any better than the men running it. The success of any mill depends so largely on the intelligent good will of the men working in it, and the proper placing of individuals according to their peculiar abilities, that the study of personnel and labor relationships should be of vital importance to those directing its development work or controlling its processes.

"In addition there are the problems of social security and old age pensions.

"It is believed by TAPPI that these subjects will prove of interest to all of the technical men as well as to the managements of the Pacific Coast pulp and paper mills."

As in the past the dinner meetings are open to all who are interested in the pulp and paper industry. They are offered by the Pacific Section of TAPPI as a service not only to members of TAPPI, but to all other men in the industry as well.

1937-1938 TAPPI Program

October 5, 1937

Dinner Meeting...Everett, Wash.

November 9, 1937

Dinner Meeting.....Port Angeles

January 11, 1938

Dinner Meeting....Portland, Ore.

February 8, 1938

Dinner Meeting....Camas, Wash.

March 10, 1938

Dinner Meeting..Vancouver, B.C.

April 5, 1938

Dinner Meeting....Seattle, Wash.

May 3, 1938

Dinner Meeting..Tacoma, Wash.

June (Date to be announced)
Annual Pacific Section Meeting

Power Problem at Ocean Falls

How to make more economical use of available power is the major problem confronting Pacific Mills, Ltd., Crown Zellerbach Corporation's subsidiary at Ocean Falls, B. C.

The company has been operating five machines, but for several years shortage of waterpower has made it necessary to curtail production at certain seasons. Just what the company will do to meet the situation has not been determined yet, and it is probable that several months will elapse before a definite decision is reached. Additional steam power or further provision for hydro energy are alternatives being considered in a survey now under way.

Regardless of the market trend, Pacific Mills, Ltd., will certainly not increase production, officials of the Ocean Falls plant stated. Under the present power set-up it would be impossible to do so, they say. However, the company is said to be considering extensive alterations to at least one of the paper machines with a view to effecting greater economy in the use of what power is available.

Pacific Mills' new wharf and drydock, for which the company spent some \$200,000, will soon be completed.

Deneau Visits Powell River

Rene Deneau, president of G. F. Steele & Company, New York sales agents for Powell River Company, paid a visit to the big British Columbia news print mill in July, accompanied by his wife.

Mr. Deneau joined the Steele organization in 1918 after six years with G. N. Meade & Company. He was vice-president of the company before the death of Mr. Steele.

During the Powell River visit he went fishing with Robert Bell-Irving, newly elected vice-president of Powell River.

Canadian Laws Hamper American Salesmen

Sales representatives of American companies doing business in British Columbia may enter only as commercial travelers and on condition that they arrange to have orders put through jobbers established in British Columbia.

Although this has been a part of the Canadian immigration law for a good many years, it is being rigidly enforced now for the first time, and salesmen for American companies are being closely questioned when they enter Canadian ports. They are permitted to contact Canadian firms and do "missionary work" for the products they represent but they cannot close any sales.

The regulations were rather loosely interpreted until recently, and Canadian immigration authorities used to permit American salesmen to cross the line to

do business without interference provided the nature of the business was known.

"The only way for American manufacturers to do business with Canadian companies by traveling representatives is through jobbers," an official of the Canadian immigration service stated. "Making direct sales between American sales agent and Canadian customer is illegal."

It was explained, however, that the immigration service takes a broad and lenient view towards American companies with branch factories in eastern Canada but which lack regular wholesale agents or jobbers on the Canadian Pacific Coast. Under those circumstances no objection is usually raised against representatives of, say, the Seattle or San Francisco office of the American company taking orders in Vancouver or other B. C. cities.

Spaulding Production Up

The Spaulding Pulp & Paper Co. at Newberg, Ore., is now averaging about 80 tons per day production, a marked contrast to the 40 to 50 tons formerly produced. The added output is due to increased efficiency, which brought production up to 65 tons per day, and to the installation of a 15-cylinder drying machine this spring, to take full advantage of the capacity of digesters and the acid system.

One of the digesters will be relined soon. Other improvements include repainting of the entire plant from start to finish.

The financial outlook for the company is increasingly good. The bondholders' committee has made arrangements with the bondholders to allow the bonds to go into technical default on Oct. 1, provided the back interest is all paid up by that time. If the interest is paid up regularly following that, the trustee under the bonds will allow them to be extended for a period not to exceed two years.

In the meantime, a portion of them will be called in by lot by the trustee as fast as the money necessary is paid over to him by the mill company, all bonds to be called in within two years. Wm. S. Walton, president of the Ladd & Bush Bank of Salem, is trustee under the bond mortgage. Fentress Hill, a director of the company, is acting as chairman of the committee for the bondholders, and B. T. McBain is chairman of the general committee.

Longview Fibre Installs Large Corrugator

Early in August the Longview Fibre Company completed installation of its second corrugating machine. The new corrugator is 76 inches wide and is reported to be the longest in the country.

Activity at Lebanon

A 20-ton sulphite stock tank, made by the National Tank & Pipe Company of Portland, is being constructed at the Lebanon mill of the Crown Willamette Paper Company, to supplement sulphite storage facilities.

The size of the log storage pond at the mill is also being increased, to carry an additional supply of logs in place of cordwood. Capacity is being increased from 1,000,000 ft. of logs to 3,000,000 ft. Stores of cordwood will be reduced by a like amount.

Powell River Perfects New Roll Wrap

Powell River Company has perfected a new wrapping paper for its newsprint rolls. The wrapper is of special sulphite composition designed primarily to withstand the hazards of traffic and represents the result of many months' experimenting by the chemical staff.

The new wrapper is said to have aroused considerable interest among the company's customers. The improvement in quality has enabled Powell River's shipping department to cut down on the amount of wrapper used on each roll and still maintain equal, if not better protection than formerly.

Second Pulp Mill Proposed for Prince Rupert

Chicago and Montreal interests may finance a 200-ton sulphite and alpha cellulose pulp mill at Prince Rupert in addition to the 250-ton sulphite plant announced by F. L. Buckley, of Vancouver.

The second mill is talked about by I. S. Steensland, executive vice-president and secretary of the Prince Rupert Lumber and Pulp and Paper Mills, Ltd. This company was incorporated by Minneapolis interests several years ago. According to Mr. Steensland, the company has obtained new capital from Chicago and Montreal interests and is ready to go ahead with the building of a 200-ton mill at Seal Cove.

Seal Cove was one of the alternative sites originally considered by the Buckley organization, which also entered into

a tentative arrangement with the Canadian government for a lease of the floating drydock. It is now understood that the Buckley project will use the drydock site.

Mr. Steensland has had two engineers making a survey of the mill situation at Prince Rupert, and a third engineer is now on the ground making a supplementary report. He says the outlook is extremely favorable.

Mr. Steensland was associated with J. B. Bjornsted in the Prince Rupert pulp scheme last year, but Mr. Bjornsted died and Mr. Steensland is now working on the project alone. He says the scheme involves taking over timber limits at Usk, B. C., formerly controlled by the late John Willman.

Pacific Straw Board To Add Dryers

Arthur Zimmerman, superintendent of the Pacific Straw Paper & Board Co., Longview, Washington, will shortly install 12 new dryers to extend the mill's board machine, and will take out the pre-heating unit that has been used up to this time. Speed of the machine, and tonnage, will be increased about 20 per cent by this means. Work is expected to start in September, when the board machine is shut down for overhaul.

Lee Now Volney Superintendent

W. C. Lee, from Fulton, N. Y., has succeeded George Martin as superintendent of the Volney Felt Mills, Compton, Calif.

Pacific Mills to Install Circulation

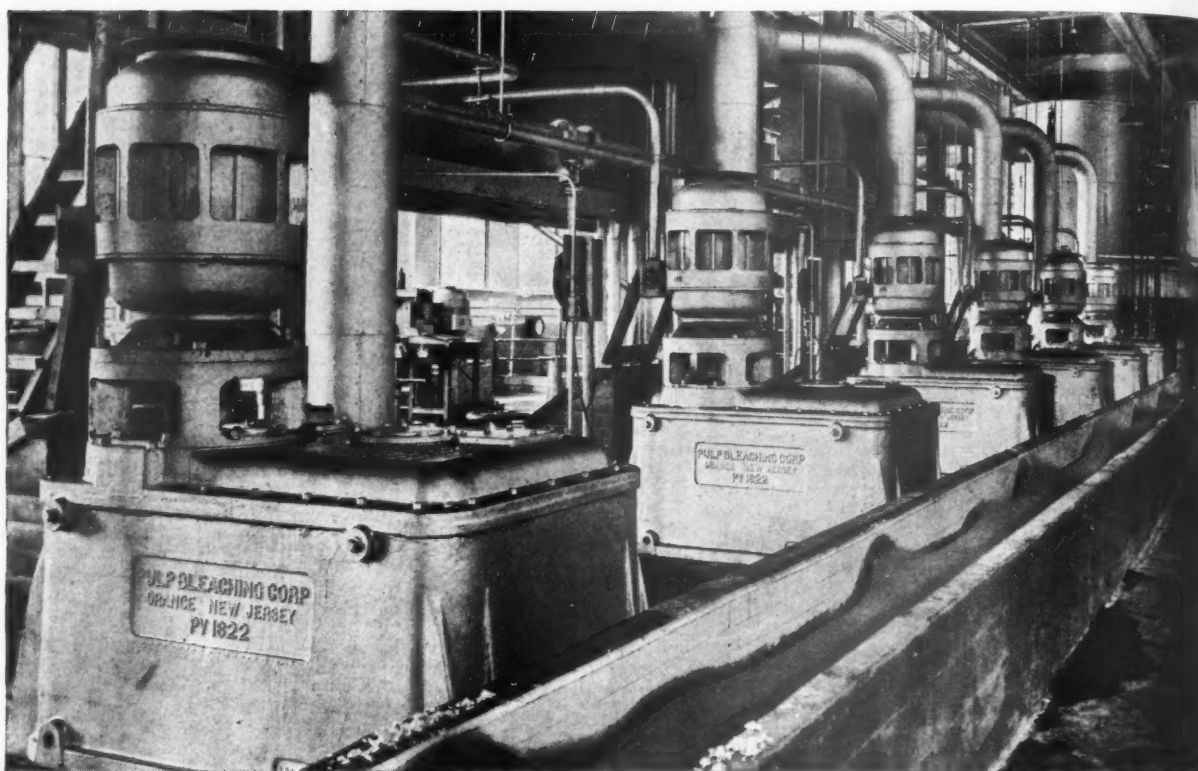
Plans have been completed for the installation of circulating systems, made by the Electric Steel Foundry Company, on three sulphite digesters in the pulp mill of Pacific Mills, Ltd., Ocean Falls, B. C. Work is expected to start in the near future.

Pacific Mills are also installing five more Norton artificial pulpstones in the grinding room, making it possible to furnish all groundwork requirements of the mill with Norton stones.

An aerial survey of the watershed area in the vicinity of Ocean Falls was recently made by the company, for the purpose of analyzing present and future power possibilities.



CONSTRUCTION of the new warehouse and dock of Pacific Mills, Limited, Ocean Falls, B.C., was well under way the latter part of July.



Six of the 31 PBC reaction units now operating at the Soundview Pulp Company in Everett, Washington

CELLULOSE PURIFICATION



PULP BLEACHING COMPANY
ORANGE, NEW JERSEY

Powell River and Pacific Mills Sign Union Agreement

Powell River Company and Pacific Mills, Ltd., British Columbia's news print mills, have signed agreements with the International Brotherhood of Papermakers and the International Brotherhood of Pulp, Sulphite and Paper Mill Workers.

Papers were signed in Vancouver August 3, stating working conditions to prevail at the two mills. Representatives of the companies and the unions expressed satisfaction with the terms, which were the result of several days' negotiation. Active enrollment of members in the unions was carried out in a campaign early this spring.

Result of the agreement is that the so-called Ontario wage scale will apply at both the British Columbia mills during the next two years.

The workers' organizations were represented by James S. Killen, British Columbia representative, and John Sherman of Port Angeles, Wash., international vice-president of the Pulp & Sulphite Workers. Sherman is also a member of the Washington state house of representatives.

Other representatives of the unions

were: For Pacific Mills—George G. Polhill, president; C. A. Thompson and Thomas Goodrich for the paper makers local No. 360; Harry Bamford, president; George Reid, vice-president; Harold Allan and Shigero Yasura, for the pulp and sulphite local No. 312.

For Powell River — E. A. Hansen, president; Vernon Hughes and Wallace MacDonald, for the paper makers union No. 142; Colin Johnston, president; Harry Carr, vice-president; H. L. Hansen, secretary, and Ted Rogers, for the pulp and sulphite local No. 76.

The companies were represented by: Harold Foley, executive vice-president; R. Bell-Irving, vice-president, for Powell River; John A. Young, secretary; F. A. Drumb, mill manager for Pacific Mills.

The union organizations are affiliated with the American Federation of Labor.

Cooper Visiting In England

E. W. G. "Teddy" Cooper, assistant paper machine superintendent of the Camas mill of the Crown Willamette Paper Company Division of the Crown Zellerbach Corporation, is visiting his former home in England during August.

McLeod Completes Quarter Century at Powell River

W. A. "Bill" McLeod, purchasing agent for Powell River Company, is being congratulated this month on completing twenty-five years of service with the organization. He has been a leader in community life at Powell River since he went to the paper town in 1912 and has been particularly active in sport. He organized Powell River's first athletic club in 1912.

Longview Fibre's New Digester Operating

The new 7½-ton kraft digester installed by the Longview Fibre Company in its kraft paper and board mill at Longview, Washington, began cooking on July 12th. It will add approximately 25 per cent to the company's sulphate pulp production facilities.

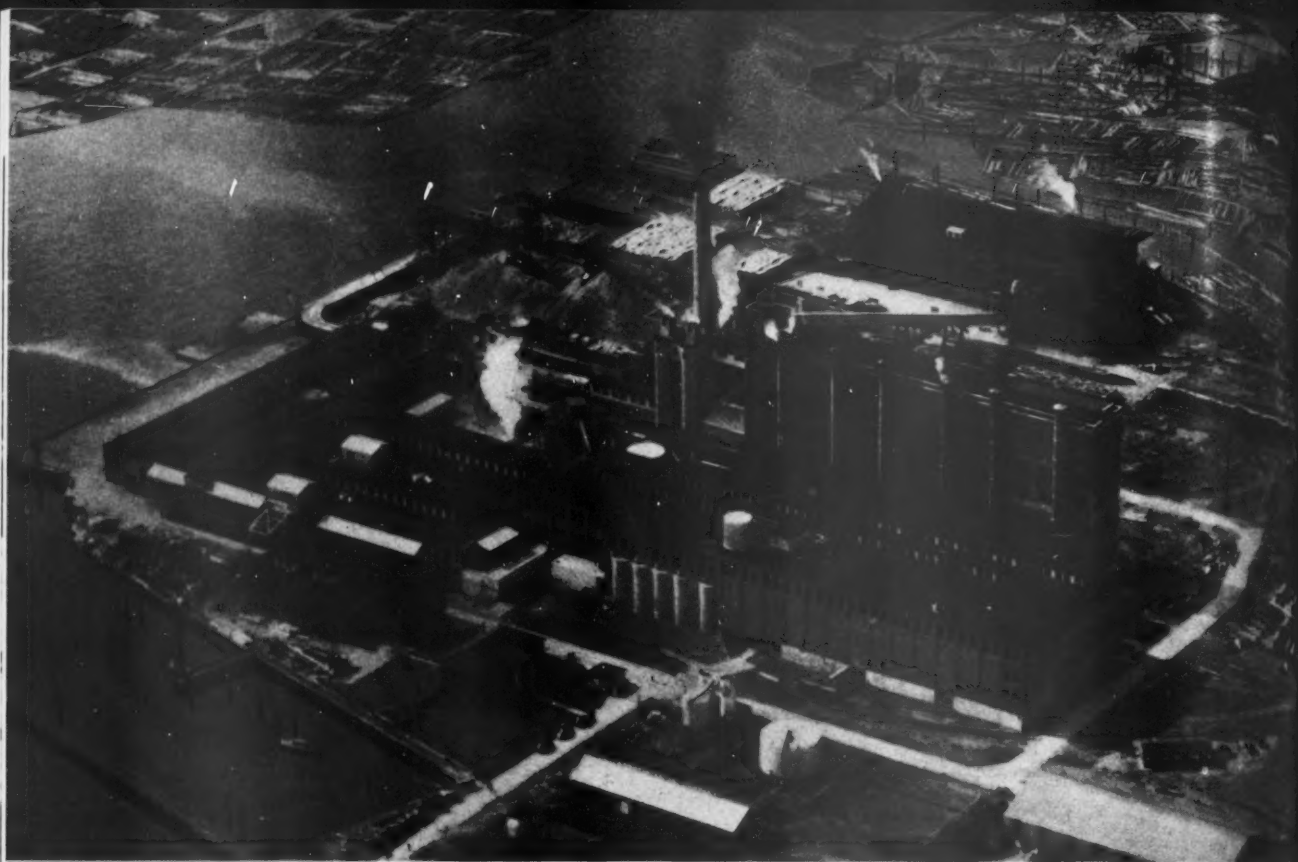
The bleach plant completed by the company several months ago is in operation, bleaching a part of the mill output. At present they are making manila colors.



THE ENGINEER'S CONCEPTION OF THE NEW BELLINGHAM PULP MILL to be constructed immediately by the PUGET SOUND PULP & TIMBER COMPANY adjoining the present 110 tons per day mill shown at the lower right hand corner of the aerial photograph » » » The new unit will produce 125 tons per day of unbleached sulphite pulp. Cavin, Marshall & Barr are the engineers in charge.

DEPARTMENTS OF THE NEW MILL are: No. 1, Wood Cleaning Building; No. 2, Hogged Fuel Storage; No. 3, Sulphur Conveyor; No. 4, Sulphur Storage (behind digester building in picture); No. 5, Hogged Fuel Conveyor; No. 6, Digester Building; No. 7, Steam Plant; No. 8, Drying Machine Building which will house two fan dryers, one drying pulp from the present mill and the other the output of the new unit.

No. 9 is the Screen Building; No. 10 the Electrical Sub-Station; No. 11, Blow Pits; No. 12, Acid Accumulator; No. 13, Acid Tanks; No. 14, Acid Plant; No. 15, Chip Conveyor; No. 16, Chipping Plant; No. 17, the new deep-water dock.



PULP CAPACITY DOUBLED

in record time !

Austin Co-operates with Soundview Pulp Company in Stepping Up Production from 200 Tons to 460 Tons per Day

The Pacific Coast Pulp Industry is "going places." This bird's-eye view illustrates an outstanding example of the advanced position in which this progressive industry stands today. More modern plants, greatly enlarged facilities and equipment of the latest types, are meeting the increasing demand for pulp.

This recently completed project for The Soundview Pulp Company at Everett, Washington, consisted of two major operations . . . both increasing capacity 130 tons per day . . . the first one to be completed on February 1st, and the second one on June 1st. Both were delivered by Austin "ON TIME" and were in actual operation on the dates specified.

The construction work and equipment installations which were handled by Austin in close co-operation with the owner's engineering staff, consisted of Digester and Blow Pits Buildings, Screen and Bleach Buildings, Pulp Storage Buildings, Chemi-Pulp Accumulator Housing, Foundations for Acid Towers and Filter Plant, Addition to Power Plant, installation of machinery and equipment, process piping, power wiring and many miscellaneous operations.

Wherever you may contemplate construction work of any type Austin is prepared to co-operate with you. Contacts can be quickly made through Austin's coast to coast offices.

THE AUSTIN COMPANY

Engineers and Builders

SEATTLE
877 Dexter-Horton Bldg.
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CLEVELAND.....GLenville 5400
NEW YORK.....WHitehall 4-6393
CHICAGO.....SUPerior 6101
DETROIT.....MAdison 8874

OAKLAND
1001 Ray Bldg.
HIgate 3424



LOS ANGELES
777 E. Washington St.
RIchmond 2231

PITTSBURGH.....ATlantic 3877
PHILADELPHIA.....RIttenshouse 8670
ST. LOUIS.....MAIn 1058
TORONTO.....MIldway 3915

California-Oregon Starts No. 4 Machine

A substantial advancement has been made by the California-Oregon Paper Mills at their Los Angeles plant with the installation of No. 4 paper machine, a new link in the production line-up of their parchment paper manufacture. The Los Angeles plant of the California-Oregon Paper Mills is the only mill west of Michigan which manufactures parchment paper. The mill has been making this type of paper for the past five years. The installation of the new machine is an expansion move in this department of production.

The new unit is a 114-inch paper-making machine. It will be used primarily to manufacture water leaf which is utilized by the parchmenizing machine. The plant manufactures parchment paper for butter wraps, ham wraps, bacon wraps, laid liners and crate liners for lining vegetable crates. The paper is a true vegetable parchment. According to Mr. Lewis H. White, manager of the Los Angeles mill, the market for vegetable parchment is good and business for his company has been expanding. The installation of the new paper making machine has been in progress for the past several months. It is now in operation.

Four Mills Projected For British Columbia

Officials of the British Columbia government state that four different groups of financiers are negotiating for sites and concessions in connection with pulp mill projects.

The government will not reveal the identity of these groups at the present time, maintaining that to do so would handicap negotiations, which are still of a preliminary nature. The four groups mentioned are understood to be in addition to the interests behind Frank L. Buckley, who is working on a sulphite mill enterprise for Prince Rupert.

A West Coast pulp and paper company was reported to be negotiating for the site at Beaver Cove on Vancouver Island, held in the name of the International Harvester Company. The company officials denied that there was anything in this report and the general interpretation in pulp circles in Vancouver was that the concern negotiating was

seeking additional pulpwood supplies. It was also rumored that the same concern was negotiating a timber deal with Wood-English, Limited, who operate a sawmill at Englewood, a short distance from Beaver Cove.

Sutton Lumber Company of Seattle is said to be angling for concessions near Tofino on the west coast of Vancouver Island.

The extent of the timber holdings of the Sutton Lumber Company is not known. Nootka Wood Products, Ltd., further north, is known to control extensive pulpwood limits in the name of British capitalists and since A. E. McMaster, formerly general manager of Powell River Company, became the directing head of this company, the general assumption has been that this organization will ultimately participate in the pulp industry.

Death Takes A. S. Brooks of Powell River Company

Anson Strong Brooks, chairman of the board of the Powell River Company and one of the timber titans of the Middle West, died at his home in Minneapolis August 3 after two months' illness.

Mr. Brooks, who was more than 80 years old, paid his last visit to the Pacific coast about four years ago shortly after the death of his brother, Dr. D. F. Brooks, founder of the Powell River Company.

Mr. Brooks' business interests ranged from Minnesota to the Pacific coast and southward into Florida. He was chairman of the Brooks-Scanlon Lumber Company, Inc., and had been active in the news print industry since 1911.

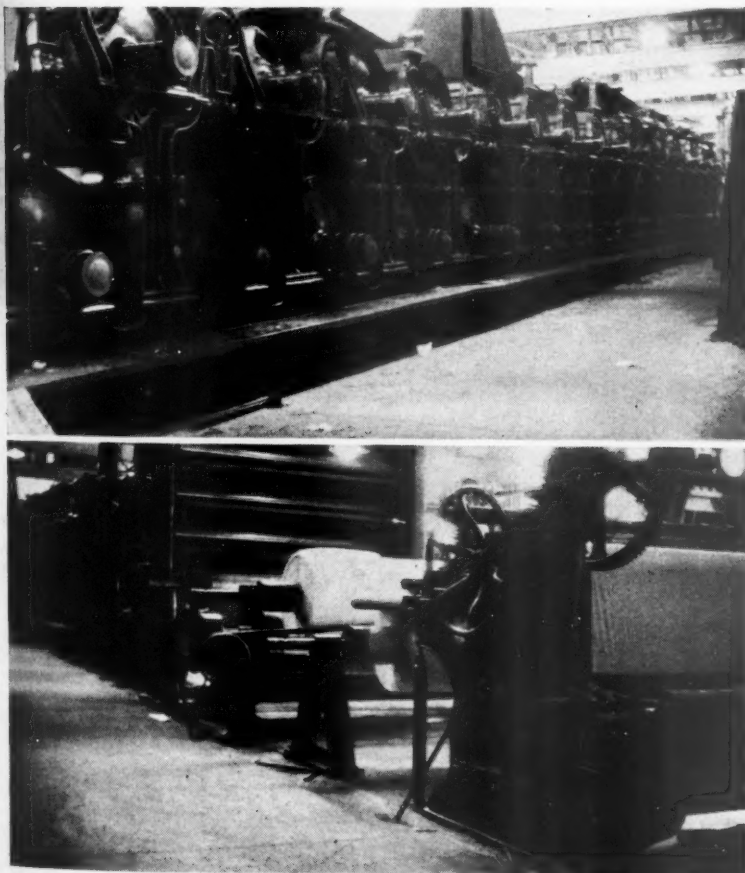
In 1873 he organized with his brothers, Lester and D. F., a grain firm known as Brooks Brothers, and operated it until 1897. In 1901 Brooks Lumber Company was organized with a capital of \$1,750,000 and grew to be one of the largest timber holding, sawmill operating and lumber selling organizations in the world.

Frank Frampton Visits Coast Mills

F. D. Frampton, vice-president and manager of the Hopper Paper Company of Taylorville, Illinois, recently visited mills in the northwest continuing his trip south to California where he was the guest in the Pomona home of his brother Charles G. Frampton, superintendent of the California Fruit Wrapping Mills. Mr. Frampton was accompanied on his trip by Mrs. Frampton and his daughter.

Camas Work Completed In a Month

The new No. 11 digester of the Crown Willamette Paper Company at Camas, Washington, and the new bleach plant are expected to come into production about Sept. 15.



Two views of the newly installed No. 4 paper machine in the paper mill of the California-Oregon Paper Mills in Los Angeles. The machine, having 114-inch trim, will make water leaf paper for parchmenizing.

Coast Mills Show Better Statements

July was the annual-statement-release-month for a number of Pacific Coast pulp and paper companies. As was expected these statements showed appreciable gains over the previous fiscal and calendar year operations. Profits are generally becoming larger and dividends are more frequently paid to stockholders who went without any return on their invested capital for a long period.

But the effect of the lean years are still in evidence, scars still show on the corporate bodies. Several companies have bothersome preferred dividend arrearages. Necessity for corporate reorganization are in evidence in several statements, brought on by years of either small earnings or losses, and lately by such government thorns as the undistributed profits surtax.

Common stock dividend are not yet on the average large enough to cause any joy to the holders, but they are far better than they were within easy recalling distance. Costs have risen rapidly and are one potent factor in holding down profits. The need for plant improvements held off for so many years has forced heavy expenditures to retain a competitive position. Technical improvements in processes and mechanical improvements in equipment have forced the mills to adopt them or admit defeat.

Within the past year a tremendous volume of improvements to plants and machinery have been made by Pacific Coast pulp and paper companies. An unknown part of the increased earnings is due to these "modernization programs," which had gathered dust in blueprint files from 1931 through 1935.

Their effect should be more generally noticeable in the statements which will appear in July, 1938, in the form of increased earnings and even better assets to liabilities ratios.

The Crown Zellerbach Report

The Crown Zellerbach Corporation, one of the two largest paper companies on the North American continent, and the largest Pacific Coast producer, reported a net profit of \$5,435,638 for the fiscal year ending April 30th, 1937. After deducting the surtax on undistributed profits which amounted to \$341,235.02, the consolidated net profit was \$5,094,402.98. On the basis of the new capital stocks outstanding as a result of the merger of Crown Willamette Paper Company, this is equivalent to \$1.23 per share on the common stock before deducting the surtax on undistributed profits and \$1.08 per share after such deduction and after allowing in each case for a full year's dividend requirement of \$5 per share on the new cumulative (convertible) preferred stock.

Crown Zellerbach Corporation's net profit for the fiscal year ending April 30th, 1936, which was not subject to the surtax on undistributed profits, was \$4,565,127.48 or \$1.08 on the old common stock prior to the merger of Crown Willamette Paper Company.

The surtax paid on this fiscal year's profits amounted to 15 cents on each common share.

Working Capital Declines

At the end of the fiscal year current assets totaled \$22,822,647, including \$3,221,873 cash, and current liabilities totaled \$9,618,358, leaving the company with working capital of \$13,204,289. At the end of the preceding fiscal year consolidated current assets totaled \$20,008,285, including \$3,869,306 cash, and current liabilities totaled \$6,341,642, resulting in a working capital of \$13,666,643, or \$462,354 more than on April 30, this year.

Sales Increase

The company's business increased substantially during the last fiscal year, sales being up 15.3%, and this is reflected in an increase of \$3,187,559 in receivables and inventories, which accounts in part for a decrease of \$647,433 in cash.

Aside from the increased volume of business and net profit, the outstanding development in the company's affairs during the fiscal year was the consolidation with its subsidiaries, recapitalization and general financial house-cleaning. In addition to adjustments in surplus in connection with the consolidation, that account was charged with a net debit of \$252,573, which included a provision of \$204,208 for possible additional taxes for prior years and expenses of \$352,864 incurred incident to the merger.

As a further step in the simplification of its corporate structure, the company liquidated and absorbed the following subsidiaries: Washington Pulp & Paper Corp., Northwestern Power & Light Co., National Paper Products Co., Sanitary Products Corp., Avalon Paper Co., and Western Waxed Paper Co. All of these units henceforth will be identified as divisions of Crown Zellerbach.

As of April 30, there was \$21,227,500 of bonds and notes payable outstanding, compared with \$22,964,800 a year previous, and \$24,992,200 on April 30, 1935. This represents a reduction in principal of \$3,764,700 in the two-year period with a reduction in annual interest charges of \$538,000.

Manufacturing plants were operated at close to capacity throughout the fiscal year, except for temporary curtailment as a result of the longshoreman strike.

Seven Million for Repairs, Maintenance, Improvements

The company last year continued to maintain its properties at a high standard of operating efficiency. Expenditures made during the year for improvements in and additions to plants, equipment and logging facilities, approximated \$3,655,000 and, in addition, \$3,300,000 was spent for maintenance and repairs during the year. Additional improvement and plant expansion will take place this year, including an increase in sulphite pulp capacity of approximately 100 tons per day. The greater portion of

this pulp will be available for sale and will represent another substantial increase in the amount of pulp made and sold. During the year ended April 30, the increase in amount of pulp sold over the preceding year was approximately 75%.

Product Tonnages Compared

Following is a comparison of the tonnage produced during the fiscal years ended April 30, 1937 and 1936:

	1937 tons	1936 tons	P. ct. inc.
News and other print paper	270,448	264,209	2.3
Coarse papers and tissues	222,376	193,707	14.8
Board	35,716	34,480	3.5
Pulp for sale	6,467	3,700	74.8
Total	535,007	496,096	7.8

The 15.3% increase in dollar value of sales during the fiscal year, in contrast to a 7.8% increase in tonnage produced, in part is accounted for by the improvement in prices that took place during the year. During the period, conditions in the pulp and paper industry generally throughout the world underwent a material change. In practically all grades of pulp a shortage of supply developed and prices advanced substantially, although this is true to a lesser extent in the case of newsprint and various grades of wrapping and tissue paper, particularly in overseas export trade.

The company's annual report to stockholders, signed by Louis Bloch, chairman of the board, and I. Zellerbach, president, has this to say about prospects of the company for the future: "Although there has been some tapering off in the demand for our products during the past three months, due in part to seasonal decline, orders continue on somewhat better than an even balance with present production capacity."

Wage Increases Granted

Crown Zellerbach, in common with most of the other Pacific Coast paper and pulp manufacturers, recently entered into new uniform labor agreements with pulp and paper workers' unions. The increase in wages granted will result in an additional expenditure of approximately \$900,000 for the current year. This is the fourth wage adjustment since April 30, 1934, the combined effect of which has been to increase the average hourly earnings of the company's mill employees concerned approximately 35%.

Taxes for the fiscal year ended April 30, 1937, totaled \$2,500,000 an increase of 55% over the preceding year.

Grays Harbor Shows Good Statement

The report of the Grays Harbor Pulp & Paper Company of Hoquiam, Washington for the year ending April 30, 1937, shows a net profit of \$875,707 after amortization, depreciation, interest, income taxes and a \$57,000 surtax on undistributed profits. This is equal, after allowing for only one year's preferred dividend on preferred stock with dividends in arrears, to \$8.35 a share on 72,492 shares of common.

This compares with a net profit of \$527,447 or \$3.55 per share on the same number of common shares in the preceding fiscal year, after allowing for only

one year's regular preferred dividend. The surtax of \$57,000 paid for the last fiscal year is equal to 79 cents a share on the common stock outstanding.

During the past fiscal year Grays Harbor paid out around \$600,000 in dividends.

Heavy Improvements

Grays Harbor spent approximately \$1,000,000 on expansion and plant improvements during the fiscal year.

One of the major additions made to plant during the 1937 fiscal year was a log breakdown plant, including a chipping plant, which will enable the company to supply most of its raw wood requirements by the purchase of logs. The other major addition during the year was another digester, with appurtenant structures and equipment. This digester did not come into production until near the end of the fiscal year. It is estimated that, with these additions, the company now has an annual pulp production capacity, exclusive of that required for the paper mill, and allowing for normal shut-downs, of 76,000 tons, as compared with an actual production in the fiscal year ended April 30, 1937, of 58,804 tons.

Production Larger

Production of 58,804 tons of pulp for sale during the latest fiscal year compares with 54,427 tons in the preceding year. In addition to pulp reduced for sale, the company produced 17,978 tons of paper in the fiscal year just ended, against 16,653 tons in the preceding year.

Rainier Earnings Slightly Under Previous Record

For the fiscal year ending April 30th, 1937, the Rainier Pulp & Paper Company of Shelton, Washington, showed a consolidated net profit of \$768,352 after depreciation, losses on retirement of capital assets, income taxes and surtax on undistributed profits. The net profit is equal to \$3.44 a share on 223,000 shares of class A and class B stock combined. This compares with a net profit of \$771,649 in the preceding fiscal year, equal to \$3.46 a share on the same number of class A and class B shares.

It was the surtax on undistributed profits, amounting to \$9,000 which prevented the last fiscal year earnings from topping the record set in the fiscal year ending April 30, 1936.

The company undertook a substantial expansion program during its last fiscal year, which will nearly double manufacturing capacity, raising it from 58,974 tons of pulp turned out in the year ended April 30, 1937, to approximately 110,000 tons yearly. This program, together with improvements, additions to facilities, and research, proved expensive and not only necessitated borrowing \$1,250,000 from banks on a long-term note, but left the company at the end of its fiscal year in the most unsatisfactory financial condition in its history.

Lacks Working Capital

As of April 30, 1937, current assets totaled \$1,434,738, including \$262,796 cash, and current liabilities totaled \$1,464,004, leaving the company with no working capital and a floating debt of about \$30,000.

One expansion step that Rainier took during the year was to purchase from the Shaffer Holding Corp. for \$275,000 a pulp plant located at Tacoma, Wash., which had a daily output of 65 tons of unbleached sulphite. Rainier formed a subsidiary, the Shaffer Pulp Co., to operate this property and also spent \$652,191 for additions and improvements to the property, increasing the plant's daily output to 125 tons.

The purchase of the Shaffer Pulp Company mill in Tacoma had previously been reported as a long term lease.

Also during the year, in addition to expenditures for and on the Shaffer property, Rainier spent \$1,401,875 for additions to its other property, plant and equipment, including \$979,464 for changes in pulp mill, new buildings and pulp drying machine not yet completed. Work in progress as of April 30 will be completed at a cost of approximately \$185,000, it is estimated.

Output of the Shaffer mill is sent to Rainier's plant at Shelton, Wash., for bleaching and drying, and Rainier purchases from other mills still additional pulp. A comparison of the company's bleached sulphite tonnage produced and purchased follows:

	—Fiscal year ended—	
	1937	1936
Purchased, others, tons	74,108	58,634
Own production, tons	58,974	52,010

Total Rainier output 133,082 110,644

Olympic Forest Products Increases Earnings

The report of the Olympic Forest Products Company of Port Angeles, Washington for the fiscal year ending April 30, 1937, shows a profit of some \$22,000 in excess of the net for the previous fiscal year.

The latest net profit is \$599,261 after depreciation, loss on disposal of capital assets, amortization, income taxes and surtax on undistributed profits. This is equal after allowing for but one year's regular dividend on preferred stock, on which dividends are in arrears, to \$2.86 a share on 94,115 shares of common stock. This compares with net profit of \$577,024 in the preceding fiscal year of \$2.62 a share on the same number of common shares after allowing for but one year's dividend on the preferred.

As of April 30th, 1937 the arrearage on Olympic's 39,997 shares of \$8 preferred amounted to \$1,813,197 or \$45.33 a share.

Olympic ended its fiscal year in satisfactory financial condition, considering that more than \$500,000 was spent on plant expansion during the year, approximately \$470,000 was paid in dividends, and regular funded debt retirement schedules maintained. Serial debentures outstanding in the amount of \$574,000 at the end of the fiscal year mature \$200,000 annually.

However, the company went to banks for a loan last year, and notes of \$425,000 are due June 1, next year. This debt, plus the large amount of dividends in arrears on the preferred stock, apparently has influenced the management to consider a refinancing and recapitalization plan, details of which will be announced shortly, it is expected.

Working Capital Lower

The company's working capital as of April 30 totaled \$836,983, against \$883,-

105 a year previous, a reduction of approximately \$50,000. It is probable that any financing to be undertaken will contemplate increasing working capital somewhat.

Pulp Capacity Increased

Additions to plant during the last fiscal year cost \$535,089, and represented the installation of a new digester, with appurtenant structures and equipment. This digester did not go into production until near the end of the fiscal year. It is estimated that, with the additions to plant, the company now has an annual pulp production capacity, allowing for normal shut-downs, of 82,000 tons, as compared with an actual production of 65,420 tons during the fiscal year ended April 30. This output compared with 57,316 tons in the preceding fiscal year.

A substantial proportion of the company's output of pulp is sold to Rainier Pulp & Paper Co. E. M. Mills, president, says Olympic Forest Products now has developed its production capacity, at its present plant location, to approximately its maximum and that "it is believed its full capacity will be required to meet the demand in the current fiscal year."

Oregon Pulp Shows Profit

The Oregon Pulp & Paper Company of Salem, Oregon reports net income of \$134,318.96 for the year ending December 31, 1936 after all charges, including bond interest and expense, depreciation, and federal income taxes, or \$17,253 more than in the year ending December 31st, 1935, when net income was \$117,081.33.

Net income for 1936 before payment of bond interest and expense, depreciation and federal taxes was \$404,156.97.

As of December 31st, 1936, the Oregon Pulp & Paper Company showed total assets of \$6,252,142.40 with current assets of \$1,110,487.88. Current liabilities are shown at \$302,276.87. Properties were valued at \$4,465,763.69 and other investments at \$512,075.95.

Columbia River Reduces Deficit

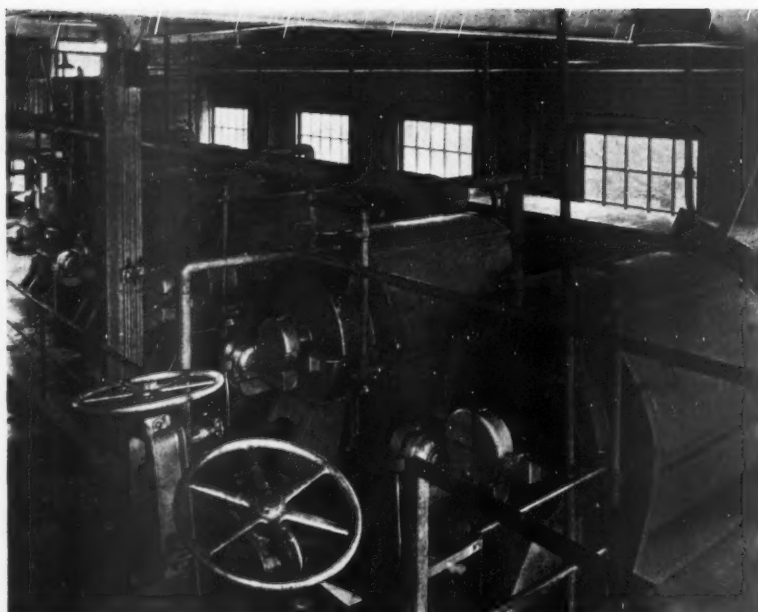
The Columbia River Paper Mills of Vancouver, Washington for the year ending December 31st, 1936 showed a deficit of \$2,342.84, a big improvement over 1935 when the deficit was \$80,178.64. Total current assets as of December 31st, 1936 show at \$623,606.72 against current liabilities of \$149,349.48. Total assets are listed at \$5,909,697.28.

California-Oregon Mills Shows Deficit for 1936

The California-Oregon Paper Mills of Los Angeles, makers of vegetable parchment and other papers showed a deficit of \$16,550.04 for the year ending December 31st, 1936 compared with a net income of \$25,957.16 for the year ending December 31st, 1935.

Current assets as of December 31st, 1936 were \$495,449.34 against current liabilities of \$252,717.23. Total assets were \$2,687,397.68.

(Continued on next page)



The FIVE "IMPCO" KNOTTERS, Rubber lined and covered with Bronze Rotors. Stainless Steel Plates. Integral Motor Drives.



KNOTTERS AND FLAT SCREENS AT SOUNDVIEW



At the left, EIGHTY-FOUR "IMPCO" 14-plate Acid Bronze Vat Flat Screens equipped with Dunbar Drive, in the new screen room of the Soundview Pulp Company's Bleached Sulphite Pulp Mill at Everett, Washington.

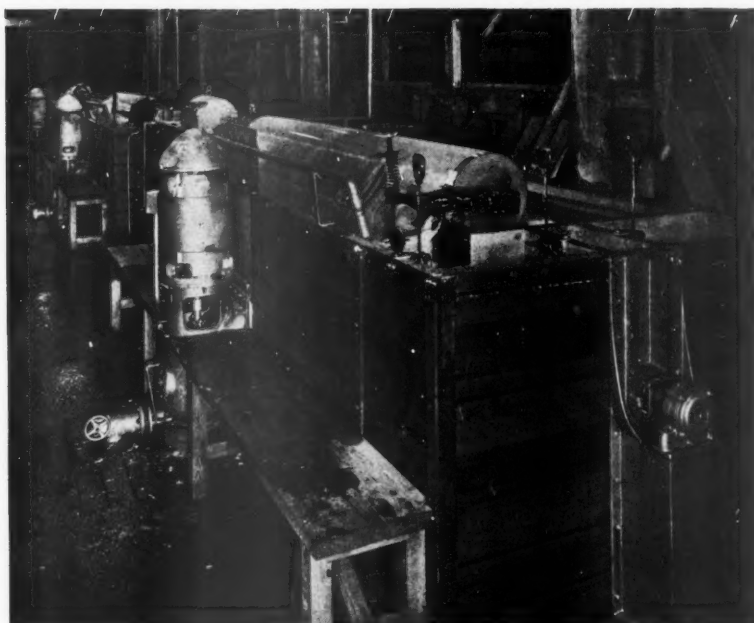
IMPROVED

PAPER MACHINERY CORPORATION

Nashua, New Hampshire



DECKERS AND WASHER AT SOUNDVIEW



THREE "IMPCO" DECKERS operating on bleached sulphite pulp. Acid Bronze Spiders with Stainless Steel Rods and Winding and Face Wires. Independent Motor Driven Couch Rolls.

At the right, The "IMPCO" Multiple Stage, Three-Cylinder Two-Agitator Bleached Stock Washer in the new Bleach Plant of the Soundview Pulp Company at Everett, Washington. Both Deckers and Washer Have Independent Motor Drives on Couch Rolls.



IMPROVED PAPER MACHINERY CORPORATION

Nashua, New Hampshire

The report is issued in the name of the Columbia River Paper Company of Vancouver, Washington of which F. W. Leadbetter of Portland is president. Columbia River Paper owns the Columbia River Paper Mills, the Oregon Pulp & Paper Company and the California-Oregon Paper Mills, which is entirely owned by the Columbia River Paper Mills. In addition the company owns a part interest in the Columbia River Paper Company of Florida, which prints and distributes citrus wraps made at Vancouver, Washington.

In his report to stockholders, president F. W. Leadbetter said:

"Although the combined showing of the mills for 1936 is considerably better than for 1935, conditions are still not satisfactory for the reason that the cost of labor and raw materials has increased proportionately much more than the prices thus far realized from the sales of paper; also during the year 1935 the operation of the mills, though less intermittent than in 1934, was still by no means as constant as could be desired, a condition, however, which improved considerably during the first half of 1936.

"The preliminary reports for the current year show some improvement due to the installation of a bleaching plant at Vancouver and a slightly better showing of our sawmill operation there.

"All the properties continue to be thoroughly maintained, and, with the necessary betterments made, continue to be in excellent position to take advantage of improving conditions as they eventuate."

Activity at Weyerhaeuser Everett Mill

One new boiler is being installed at the Everett mill of the Pulp Division, Weyerhaeuser Timber Company, and the remainder of the old Mill A boiler plant is being converted into an additional hogged fuel storage building.

The new boiler completes the original power plant design for the Everett mill as laid out by Otto A. Schoenwerk, consulting engineer, who designed and supervised the construction of the plant. It will provide standby boiler capacity.

During July three rotary suction boxes were installed on the pulp drying machine. These were built by Rice, Barton & Fales of Worcester, Massachusetts, who built the drying machine. The Weyerhaeuser Everett mill is now averaging close to 250 tons per day of unbleached sulphite pulp.

The boiler installation and other work is being performed under the supervision of L. E. Hill, Jr., plant engineer.

Anderson Talks To Lions Club

In a recent talk before the Lions Club of Bellingham, Washington, Ossian Anderson, president of the Puget Sound Pulp & Timber Company stated that the first unit of his company's pulp mill to be constructed on the former Morrison Mill Company site, will employ close to 400 persons. Construction of the brick and steel buildings will require from seven to eight months and will give employment to 700 men, he said.

Mr. Anderson also told the Lions that if plans now in the development stage materialize, a rayon pulp mill will be built in Bellingham to employ several hundred additional men.

Cavin Moves To Bellingham

Mr. and Mrs. H. D. Cavin of Tacoma moved to Bellingham on August 1st where Mr. Cavin has charge of the construction of the new mill unit for the Puget Sound Pulp & Timber Company.

He recently resigned as resident engineer for the St. Regis Kraft Company of Tacoma to form the consulting engineering firm of Cavin, Marshall & Barr, who have designed the new Bellingham 125 tons per day unbleached sulphite pulp mill.

Billington Joins Weyerhaeuser Research Staff

Paul S. Billington, formerly with the pulp and paper section of the Forest Products Laboratory at Madison, Wisconsin, is now connected with the Weyerhaeuser Timber Co., as one of the staff of the Longview research laboratory, headed by R. S. Hatch, as director of research.

Mr. Billington is a native son of the Northwest, having been born and raised in Oregon. He graduated in chemistry from the University of Oregon.

Fosse Sees Two Disadvantages

At a recent luncheon meeting of the Marshfield-North Bend, Oregon Rotary Club, K. O. Fosse, president of the Coos Bay Pulp Corporation, stated Coos Bay had two distinct handicaps which must be overcome before the community can expect increased wood pulp production.

An adequate water supply of good quality and at a low price is needed prior to the establishment of additional production facilities. The other problem to be solved is that of shipping. At present, Mr. Fosse said, the shipping rate is 50 cents per ton higher than for other Coast ports.

Working On Vernon Machine

The work of putting another tier of dryers on and of getting the jordan in place for No. 2 machine at the Vernon plant of the Fibreboard Products, Inc. is progressing. This machine was operated prior to its present re-vamping continuously from 1912 up to the present. It is expected to be in operation again some time early in 1938.

Attridge Heads Hi-Jinks Committee

Announcement was made early in August that R. F. Attridge will head up the committee of the third annual sports carnival and Hi-Jinks presented by the Paper Mill Men's Club of southern California. Lewis H. White formerly appointed to the general chairmanship was forced to withdraw because of ill health. The party this year will be held the early part of October, the date being tentatively set for the 8th. The location has not been selected as yet but the various committees are going into action and final details will be settled for announcement next month.

Dreshfield Calls on Coast Mills

Arthur C. Dreshfield, research manager for the Paper Makers Chemical Division of the Hercules Powder Company, visited Pacific Coast paper mills early in August, accompanied by Alec C. Duncan, manager of the company's Portland office and plant. Mr. Dreshfield is located at the company's research laboratory in Kalamazoo, Michigan.

Rainier Breakdown Plant Running

The new log breakdown plant of the Rainier Pulp & Paper Company at Shelton, Washington began operations July 27th. Rainier will now be able to produce 40 units of chips per hour instead of 25, using the entire log for chips.

At the Weyerhaeuser Longview Mill

H. R. (Bob) Heuer, operating superintendent of the Pulp Division, Weyerhaeuser Timber Company at Longview, returned August 7th after a trip of seven weeks throughout the East and Middle West which included attendance at the national convention of the American Pulp & Paper Mill Superintendents Association at Springfield, Massachusetts in June.

The new 16 by 52 foot digester, No. 7, went on the line the middle of June and will provide relief for the other six digesters.

A maintenance shop has just been completed at the plant. The new building, located between the pulp mill and the office, includes a tool room, carpenter shop, pipe shop, and accommodations for the electrician and millwright. George Wolfe, master mechanic, and L. W. Bailey, chief electrician, who work under resident engineer D. K. MacBain, have their offices here.

The Longview pulp mill office building is being extended, providing larger quarters for the engineers and the accounting department.

In the mill machine room, a new Beloit cutter has been installed at the end of the vacuum dryer, with an automatic layboy.

Gregg to Resume Plant Cover Production

J. P. Gregg Co. of Redlands, California will resume production in early fall of paper plant covers. Production was halted in February by a \$25,000 fire. The plant has been completely rebuilt of sheet iron and concrete. The firm has been in operation at the same site for more than 30 years. Other products of the company are tree wraps, surgical splints and fire-by-friction sets for the Boy Scouts of America.

Mackenzie Makes Hole in One

R. C. Mackenzie, in charge of sales and production at Powell River, has always been regarded as one of the paper town's ablest golfers, but his fame spread to Vancouver last month when, after losing every bet he had made up to the eleventh green, stepped up and sank his tee shot for a hole in one.

Wood Pulp Prices

Third quarter domestic wood pulp prices now in effect are lower than for foreign pulp of similar grades. Bleached sulphite, domestic, ranges in price today from \$65 to \$69 ex dock Atlantic ports. These prices became effective July 1st and cover the several qualities of bleached sulphite.

These prices are to contract buyers who purchased tonnage for the entire year on a basis of price adjustment quarterly. First quarter prices were \$54 and second quarter prices on bleached sulphite was \$58.

There is some difference of opinion as to whether the fourth quarter price will go much above \$65, or whether it will be raised at all. Possibly the increase will be nominal, no more than covering actual increases in production costs.

The price of domestic prime unbleached sulphite for the third quarter ranges from \$52 to \$54 per ton ex dock Atlantic ports. Second quarter price was around \$46 as compared with \$42 for the first quarter.

While the spot market is not as active as it was a few months ago, due to a normal slowing up in the pulp market during the summer months, no odd lots of high quality bleached or unbleached went unsold and prices are firm although a few resales of excess pulp by converting mills have been reported at levels under the spot market.

Considerable bleached sulphite of prime quality for spot delivery has been sold at around \$100 delivered, and unbleached at around \$70.

None in the industry see any factors which might lower prices for 1938, the opinion being that they will remain firm and possibly rise. It is predicted by some that within a year the unbleached sulphite pulp market will be stronger than the bleached market due to the conversion of production from unbleached to bleached on the North American continent.

However, this opinion is qualified with the statement that several bleached sulphite mills are going into rayon grades because of the steadily increasing demand for these so-called dissolving pulps.

A major war either in Europe or in the Orient would, it is believed, upset all normal predictions and skyrocket prices resulting in excessive building of capacity which ordinarily could not be absorbed.

Outside of feeling certain that 1938 will be a good year in the wood pulp business those in the industry are chary of becoming prophets. Relatively new factors have relegated the yardsticks of 1929 into the discard. Wood pulp is no longer entirely dependent upon the paper industry for its market, although paper is still the major outlet. Rayon, transparent cellulose sheetings, lacquers, and the numerous new uses for paper itself, all tend to make predictions not only difficult but dangerous.

Foreign prime unbleached kraft pulp is bringing around \$70 to \$75 per ton, ex dock Atlantic ports. Some spot kraft, mostly resale lots, is available at prices between \$60 and \$70. Little domestic kraft pulp is as yet on the market.

Foreign producers are offering prime kraft for shipment during 1938 at prices ranging from \$60 to \$65 per ton ex dock Atlantic seaboard.

First Quarter Earnings Reported

Rainier, Grays Harbor and Olympic Forest Products Adopt New Policy

Adopting a new policy of issuing quarterly earnings reports the Rainier Pulp & Paper Company, the Grays Harbor Pulp & Paper Company and the Olympic Forest Products Company have released earnings statements for the first quarter of their fiscal year which ended July 31st, 1937.

The Rainier company report shows a net profit of \$360,059 for the first quarter, after depreciation and normal income tax but before provision for surtax on undistributed profits. This compares with a net profit of \$239,786 for the same quarter in the 1936 fiscal year.

In the first quarter Rainier sold 889 tons of pulp in excess of production.

The Grays Harbor Pulp & Paper Company's first quarter of the fiscal year report showed net profit of \$565,-

506 after depreciation, interest and normal income taxes but before provision for the undistributed profits surtax.

During the three months ending July 31st, Grays Harbor sold 3,621 tons of pulp more than it produced, depleting inventory by that amount.

In the same 1936 quarterly period Grays Harbor netted \$195,487.

In the first quarter of the current fiscal year the Olympic Forest Products Company netted \$389,696 after depreciation, interest and normal income taxes but before provision for the surtax on undistributed profits. In the same quarter of the 1936 fiscal year Olympic netted a profit of \$200,699.

During the first quarter of the current fiscal year Olympic sold 4,731 tons of pulp in excess of production.

Quebec Attempts News Print Control

An attempt to prevent history from repeating itself in regard to the Canadian news print industry is believed to be behind the statements of Premier Duplessis of Quebec hinting at co-operative regulation of the industry by the governments of Quebec and Ontario.

Mr. Duplessis, like his predecessor, A. L. Taschereau, insists on stabilization and curbing of over-production, and he has forbidden pulp wood export and the opening of new mills until those closed have been re-opened.

Back of Mr. Duplessis' announced policy is the fear that the economic difficulties which followed in the wake of the depression in the news print industry may be repeated if the news print business goes on another construction rampage as a result of increasing demand for news print and promise of higher prices.

Present conditions in the industry are, in some respects, similar to those which prevailed in 1928. At that time the mills were operating at capacity. The prices received permitted of profitable operations. There was talk of a news print shortage. Capital was attracted, and so were promoters. A boom followed and productive capacity was expanded to hitherto unknown heights, to be followed by collapse of the price structure.

In the intervening eleven years the slack has been taken up. Demand is not far short of effective capacity. For some months there was talk of a paper shortage. News print prices have advanced, only modestly so far, but with the promise of a sharp increase next year.

In the past two or three years the price policy of the Canadian producers has been more or less controlled by the threat of government intervention or depend-

ency on banking associates. Publishers fear that with these "curbs" removed or slackened as prosperity once again returns to the industry, the operators will not lose time in making them "pay" for the uneconomic prices which have prevailed for news print in recent years.

Maintenance of a fairly even balance between supply and demand and the adoption of a considerate price policy would make for a long period of prosperous conditions in the belief of Premier Duplessis, who believes that the government should direct but not control the industry.

Hodges and Adlard Visit Coast Mills

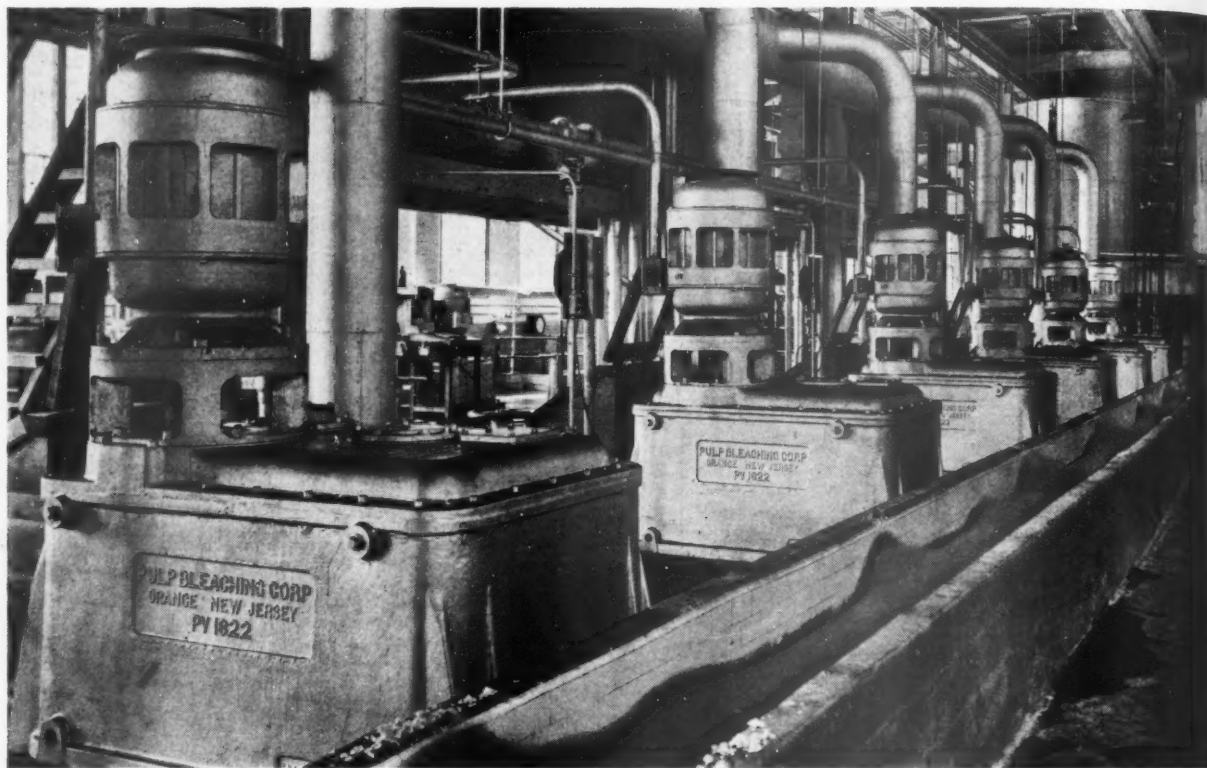
Walter S. Hodges recently completed a coastwide trip in company with Edward C. Adlard, felt mill superintendent for the Orr Felt & Blanket Co. of Piqua, Ohio. The two met in Los Angeles, and covered the entire territory north to Seattle.

This was Mr. Adlard's first trip to the Coast since 1928, and he spent a month looking over the mills. From Seattle he went to Spokane to visit, then returning east.

Zimmerman's Vacation a Success

Arthur Zimmerman of the Pacific Straw Paper & Board Company was away from Longview early in August, making a vacation trip to Lake Louise and vicinity. Art lost some 20 pounds on the trip.

The Zimmerman luck on fishing has been good this year, according to reliable sources.



PULP BLEACHING COMPANY'S BLEACH ENGINE DRIVES



13 Vertical Agitator Drives in Soundview's Bleach Plant. Built by Western for the Pulp Bleaching Company.

**"Gear Products
From Gear Specialists"**

**WITH PROMPT AND
RELIABLE SERVICE**

**ARE AN EXAMPLE OF THE SERVICE
WESTERN CAN RENDER PACIFIC
COAST MILLS.**

All units furnished for Soundview Pulp Company's new bleaching plant were manufactured for the Pulp Bleaching Company by the Western Gear Works in their Seattle plant.

**PARALLEL SHAFT—RIGHT ANGLE—
VERTICAL SPEED REDUCERS**

Made with

**HERRINGBONE—HELICAL—SPUR—BEVEL
—SPIRAL BEVEL—WORM GEARS**

Western Gear Works

SEATTLE, WASH.

Associated
with

PACIFIC GEAR & TOOL WORKS Incorporated

SAN FRANCISCO PORTLAND



EL PASO

LOS ANGELES

WESTERN GEARS

Anacortes Making Repairs

Early in August the mill of the Puget Sound Pulp and Timber Company at Anacortes, Washington was shut down for repair work which was being done under the direction of James P. V. Fagan, superintendent. The work included relining a digester and a limerock tower in the acid system.

Hawley Accumulator In Service

The new accumulator of the Chemipulp system at the Oregon City mill of the Hawley Pulp and Paper Company, went into operation late in July. It has since been functioning nicely and is assisting in turning out a fine grade of pulp, according to vice-president Carl E. Braun. The new unit has increased pulp production at the plant by more than 20 tons per day.

Pittenger Married In June

Paul A. Pittenger, chemist with the Pulp Division, Weyerhaeuser Timber Company, Everett, Washington, was married to Thelma Weimer of Longview in Seattle June 12th.

Sixteen Norton Stones for West Linn

Sixteen Norton artificial pulpstones are being installed in No. 2 grinding room of the Crown Willamette Paper Company mill at West Linn, Ore., replacing the natural stones previously used. No. 3 grinding room was already equipped with 12 of these units.

Powell River Checks Snowfall

High up on the mountains overlooking Malaspina Strait and the surrounding territory, R. H. Simmonds, Powell River Company's waterpower surveyor, is carrying on his annual enquiry into the hydro-electric potentialities of the company's watershed at Powell Lake and Lois Lake.

On the result of this survey depend the company's power plans for the year. About 72,000 horsepower, sufficient to supply a city of 200,000 people, is generated almost entirely for mill purposes and supplying electric energy to the towns and surrounding district of Powell River.

Company surveyors under Simmonds climb 3,000 feet above the waters of Powell Lake to make measurements of the snow and compute its water content. They prepare data on run-off for the use of the operating staffs. Years ago the rather haphazard method of calculating by observation of the snow depth was in vogue, but this did not attack the root of the problem. The apparent depth of snow has little actual relation to its water content. Hard-packed snow and powdered snow might have equal depths, but they are no accurate guide to water content.

The modern method is to drive core tubes into the snow. The depth is taken, and the water content computed. Samples are taken at different stations and the average compiled.

Stockholders Approve Recapitalization

Of Rainier, Grays Harbor and Olympic Forest Products

At special meetings August 10th in San Francisco of the stockholders of the Rainier Pulp & Paper Company, the Grays Harbor Pulp & Paper Company and of the Olympic Forest Products Company, plans for recapitalization were approved.

As a result all the class A and B Rainier stock will be exchanged for a new common stock on the basis of one and one-quarter shares of the new common for each class A share and one share of the new common for each share of class B stock.

Upon completion of the exchange, there will be 248,000 shares of common outstanding. Then the company plans to sell 49,600 additional common shares to stockholders on the basis of one new share for \$50 for each five shares held. The offering is to be made to stock of record August 20 and the rights will expire on the close of business on the 14th day after the record date. Any of the shares not taken by stockholders will be offered publicly through underwriters.

Following the sale of the 49,600 additional shares, Rainier will have 297,600 shares of new common capital stock outstanding, no preferred stock, and no funded debt.

Funds to be derived from the sale of the 49,600 additional common shares are to be used to redeem all bank loans, other than current, estimated to be \$1,250,000; to reimburse the company for advances to and investment in a subsidiary, and for working capital.

Grays Harbor Plan

The Grays Harbor Pulp & Paper Company's stockholders voted to split up the present 72,492 common shares on a four and one-half for one basis, making 326,214 shares outstanding after the split-up. A new \$2 cumulative convertible preferred issue was authorized by stockholders at the meeting which is to be offered to holders of the present preferred on the basis of four-and-one-half shares of new preferred in exchange for each \$8 cumulative preferred share now outstanding. The 33,771 preferred share outstanding as of April 30, last, had cumulative dividends of \$52.67 a share, aggregating \$1,778,806, in arrears. The new \$2 preferred will be convertible into common, share for share, for a period of five years.

Provided all 33,771 shares of \$8 preferred are converted into new \$2 preferred, there will be 151,970 shares of the new issue outstanding. However, the company has been advised that holders of at least 17,368 shares of the old \$8 preferred will hold this number of shares until preferred dividends have been paid and such stock has been purchased or redeemed.

Therefore, the company plans to offer any shares of new \$2 preferred not issued under the exchange offer, together with 92,692 additional shares, to common stockholders at \$36 a share. Any

new preferred stock not taken by common stockholders is to be offered publicly through underwriters.

Of the cash proceeds to be received by the company, \$3,099,970 will be used to redeem at 103% of the principal amount and accrued interest on October 1, 1937, and January 1, 1938, respectively, \$1,964,500 principal amount of first mortgage 6% gold bonds, series 1943, and \$964,000 principal amount of first mortgage 6% gold bonds, series 1944. To the extent holders of the \$8 preferred stock do not accept the offer of exchange, a portion of the cash proceeds will be used to provide funds to pay accrued dividends on the unexchanged shares or to purchase such shares for retirement.

The balance of the cash proceeds will be used to reimburse the company for improvements to its property and plant, and to provide additional working capital.

Olympic Forest Plan

Stockholders of the Olympic Forest Products Company voted to recapitalize their company, approving a plan to retire existing \$8 preferred stock with dividends in arrears and to provide sufficient funds to pay debts and provide additional working capital.

The plan approved provides for the split-up of the 94,115 common shares now outstanding on a two-for-one basis, making 188,230 common shares outstanding after the split-up. A new \$2 cumulative preferred issue was authorized, which is to be offered to holders of the 39,997 shares of \$8 preferred now outstanding on the basis of four shares of new preferred and one-half share of common for each \$8 preferred share. The \$8 preferred now outstanding had dividends in arrears, as of April 30, last, of \$45.33 a share, aggregating \$1,813,197.

If all the \$8 preferred is exchanged for new \$2 preferred and common stock, the company will have 159,998 shares of \$2 preferred and 208,229 shares of common stock outstanding.

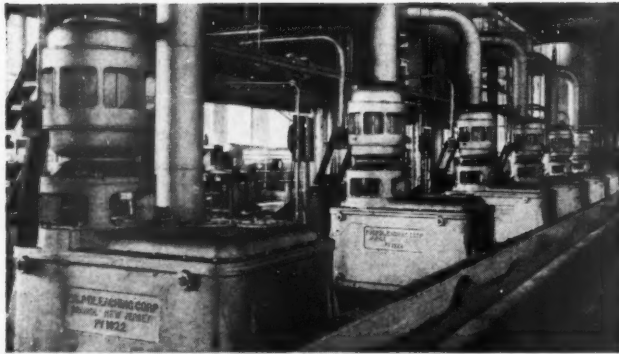
Following the exchange, the company plans to offer 20,823 additional shares of common stock to common stockholders at \$30 a share. When this stock is sold there will be 229,152 common shares outstanding.

Also, the company plans to offer to its stockholders the number of shares of common stock that may be necessary to provide funds to purchase for retirement the shares of \$8 preferred stock not exchanged under the exchange offer and pay accumulations thereon.

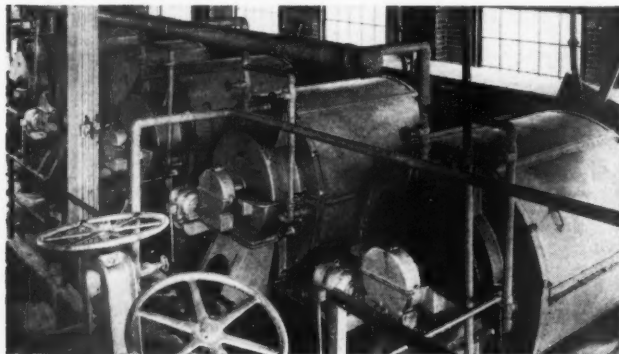
Any of the shares being offered to common stockholders and not taken by them will be offered publicly through underwriters.

Registration statements were filed with the Securities & Exchange Commission on July 28 and should in normal course become effective August 17. The offers to stockholders will be made shortly after the registration statements become effective.

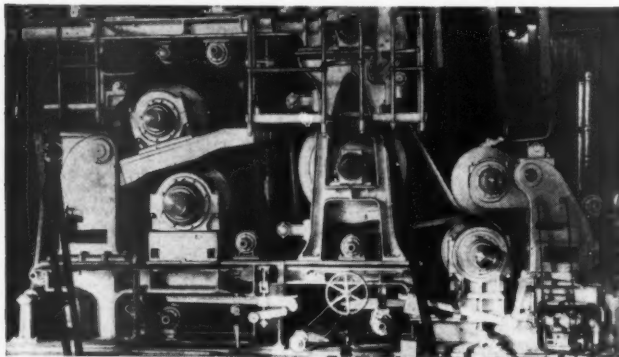
24 ASSOCIATED PRODUCTS



BLEACHING PLANT—Cycol Motor Oil S. A. E. 40 lubricates these large reduction gears in the bleaching plant.



WOOD PULP KNOTTERS—Veedol Extreme Pressure Lubricant S. A. E. 160 and Black Lustre Grease No. 0 are used here.



DRYING MACHINE—Cycol Extreme Pressure Lubricant S. A. E. 110, Avon Black Lustre and Avon Block Grease specified.

Assure trouble-free performance in great Soundview pulp mill

Since the day the motors first turned over—seven years ago—Associated oils and lubricants have protected the complex equipment of the Soundview Pulp Co., Everett, Wash.

Associated lubrication engineers have from the beginning worked with engineers of the Soundview Pulp Company on all lubrication problems. Their success is evidenced by the years of trouble-free operation in this great plant—one of the largest pulp mills in the world.

In all industries—in all types of equipment—Associated products have achieved similar recognition. Associated lubrication engineers are always available, anxious to work with plant engineers in specifying the right Associated product for the right job.

TIDE WATER ASSOCIATED OIL COMPANY

ASSOCIATED

DIVISION

Accident Prevention Major Topic at Portland Meet

Industrial accident prevention will be a major topic of discussion at the Western Safety Conference in Portland, Ore., Aug. 17-20, according to M. L. Mammen of the Crown Zellerbach Corporation, chairman of arrangements for the convention.

"We have a big job ahead of us to reduce industrial accidents," Mr. Mammen declared. "In the 11 western states are represented almost every industry with an accident rate of 15 or over. The petroleum industry has an accident rate of 15.03, pulp and paper 17.59, clay products 19.93, meat packing 28.62, with lumbering the highest of all, 57.29. At the Western Safety Conference in Portland August 17 to 20, we hope to make definite progress in reducing these accident rates."

Charles H. Martin, governor of Oregon, is official host to this year's Western Safety Conference, the third to be held since 1935. In that year the first conference was called by Frank F. Merriam, governor of California, and held in San Francisco. Last year's conference was held in Salt Lake City.

The keynote speaker in the industrial accident field will be William C. Cameron, Division of Labor Standards, Washington, D. C., speaking on the subject "Accident Prevention — Common Ground for Labor Management and Administration." The principal speaker in the field of traffic safety will be Ralph L. Lee, General Motors Corporation, Detroit, Mich., Mr. Lee's subject will be "An Approach to Highway Safety Education." Numerous other speakers, many of them of national prominence, will conduct general sessions and lead departmental discussions.

Representing industrial safety on the Oregon Board of Governors is M. L. Mammen of the Crown Zellerbach Corporation, well known in safety work in industry. Mr. Mammen is also general chairman of arrangements for the convention, and much of the preparation



M. L. MAMMEN
In Charge Arrangements
for Western Safety Conference

for the meet has been carried on under his direction and with the cooperation of his company.

Wm. Cutts of the Oregon Industrial Accident Commission, is vice chairman of the Board of Governors of all 11 states. Others prominent in the conference work include Leon N. Lefebvre, O. R. Hartwig, E. R. Brown, Franklin Griffith and L. C. Newlands of the finance committee; Wm. L. Norvell, director of publicity; Mrs. A. C. McIntyre, Dr. C. A. Howard and Dr. E. B. McDaniel, members of the Board of Governors. Carl H. Fry of the California Industrial Accident Commission is chairman of the Board.

In addition to Mr. Mammen's participation, the pulp and paper industry will have an active part in the four-day session. First aid teams will hold practical demonstrations of industrial first aid during the conference, and among these teams will be groups from Washington Pulp & Paper Corp. at Port Angeles, Washington, Olympic Forest Products Co. of Port Angeles, Rainier Pulp & Paper Co. of Shelton and the Crown Willamette Paper Company of Camas.

The program includes a parade from the Multnomah Hotel to the Masonic Temple, where the meetings will be held. Topics for discussion include industrial safety, traffic safety, home safety and public safety. On the social side will be luncheon, a barbecue dinner and Columbia River boat trip, and a final informal banquet.

The general public, as well as industrial and safety leaders, is invited to attend the sessions of the Conference.

Soundview Reports Seven Month's Profit

For the first seven months of 1937 the Soundview Pulp Company with its mill at Everett, Washington showed a net profit of \$946,365 after interest, amortization, depreciation and normal income taxes but before provision for the surtax on undistributed profits. This compares with a net profit of \$316,733 in the first seven months of 1936.

Death Takes B. J. Williams

B. J. Williams, who served as second sales manager of the Paraffine Companies, and whose record of thirty-five years with the company was excelled by few, died July 24 in Los Angeles. He is survived by his widow. His last post with the firm was sales manager of Glass Containers, Inc.

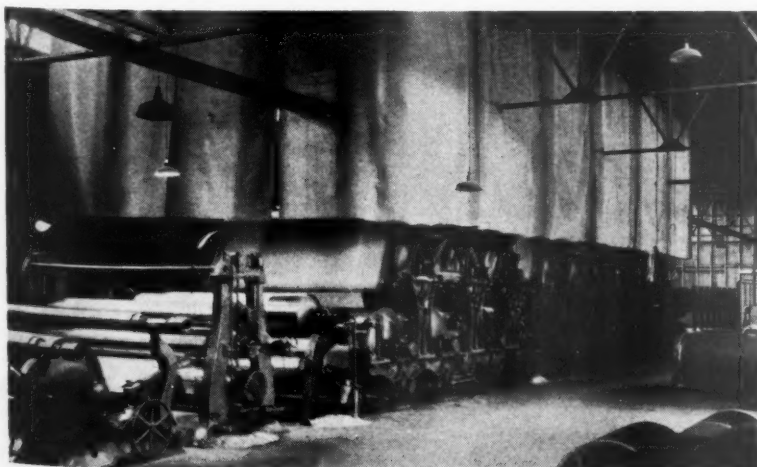
Crown Transfers Roy Packer

O. Roy Packer has been transferred from the mechanical department of the Crown Willamette Paper Company at Camas, Washington, to the purchasing department of the company in the Portland offices.

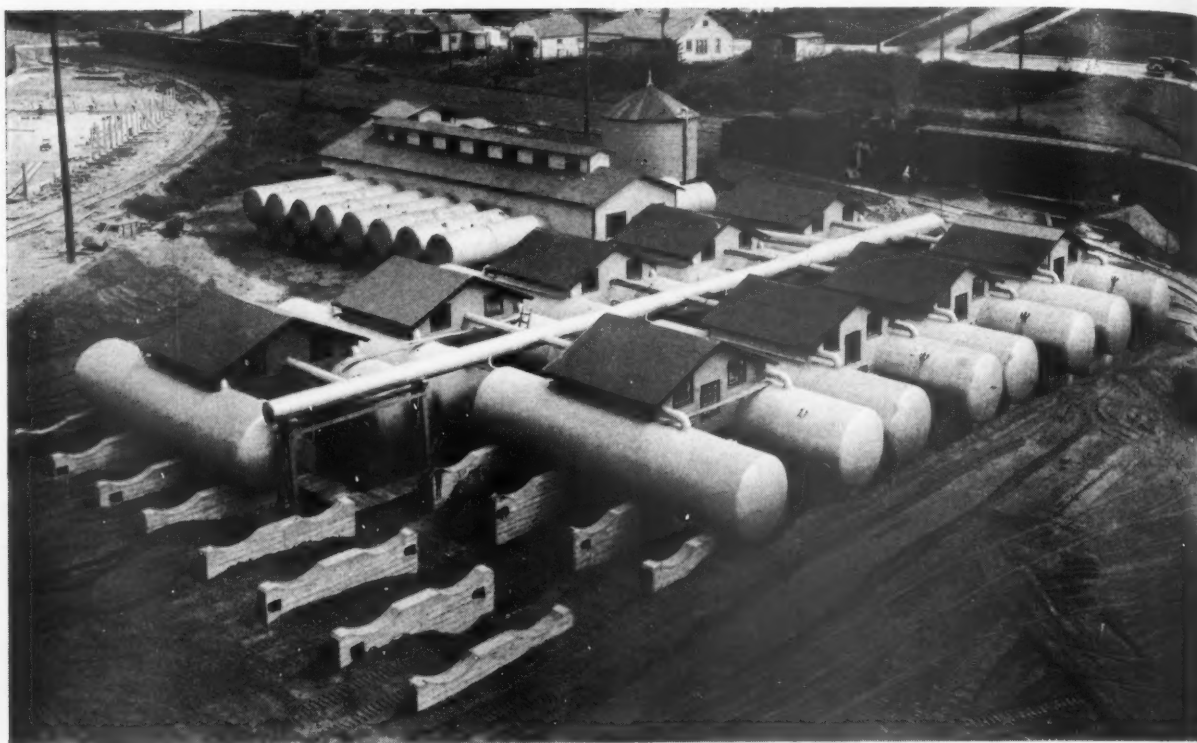
Hawley Wins Insurance Case

Following a directed verdict in federal court at Portland, the Hawley Pulp and Paper Company has recovered full damages for the loss of the company's wood mill at Milwaukee, Ore., which burned Aug. 13, 1933. The company sued 13 insurance firms which had issued policies to the mill and who had disputed the amount for which they were responsible.

Although it was first stated that the case would be appealed by the defendants, settlement has since been made on the basis of the court award. The Hawley Pulp & Paper Co. was allowed the full loss of \$76,500, plus interest, attorney's fees and court costs, bringing the total to approximately \$98,000.



A view of the parchment machine in the mill of the California-Oregon Paper Mills in Los Angeles. This is said to be the only parchmentizing machine west of Michigan.



The 42,000,000 gallons per day pressure filter plant of the Soundview Pulp Company, Everett, Washington

WATER TREATMENT HEADQUARTERS

PACIFIC COAST pulp and paper mills meet the Quality Standards of today with the aid of clean, pure, filtered water. Modern filtration and treatment plants, such as the one pictured above, provide a continuous supply of water, free from dirt, color, and slime producing bacteria.

Experience over many years in the treatment of Pacific Coast water enables the SHIBLEY COMPANY to offer the pulp and paper industry an engineering service capable of solving any water filtering or treating problem.

Pressure Filters, Gravity Filters, Water Softeners and Boiler Water Treatment

SHIBLEY COMPANY

WATER TREATMENT ENGINEERS

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Citrus Industry Requires Large Volume of Coast Paper

Early Forty-niners got their gold out of California's hills and streams. Pacific coast paper mills turn annually to California's golden citrus crop for a stake which runs well over \$2,000,000. With an annual crop of citrus fruits running well over 100,000 carloads, the California citrus industry is a customer each year for more than 12,000 tons of citrus fruit wrapping papers. Six mills, two in southern California, two in Oregon, and two in Washington, manufacture the paper that carries California's biggest crop to market protected from moisture and the sundry enemies of perishable fruits.

No date is known for the origination of the paper wrap as a protective covering for fruit going to market. In the citrus industry of southern California its use was not a factor in the commodity market until the 1870's when the growing and marketing of citrus fruits began to crystalize into an industry. Its use in this sector is universal now with the exception of loose fruit which is shipped in small quantities unwrapped.

The original wrap was a machine glazed sheet, rough on one side and finished on the other, made dry like wrapping paper. Packers found this paper unsatisfactory and the mills obliged by developing over the years a wrap which meets all requirements. Today an improved tissue is used which is highly treated with oil to provide softness and wrapping qualities as well as moisture protection. The paper carries nineteen per cent moisture.

Individual packers may vary in their requirements but the majority use tissues in two colors, canary lemon which is used for lemons and grapefruit and orange tint which is used for oranges. Sizes of sheets used are made in seven classes: 8"x8", 9"x9", 10"x10", 11"x11", 12"x12", 13½"x13½" and 15"x15". The first two sizes are used for lemons, the third size is used sometimes for lemons but usually for oranges, this and the fourth and fifth sizes are used for oranges, and the last two sizes for grapefruit. Large oranges sometimes require the 13½"x13½" size.

The citrus industry, a truly western enterprise despite the development of similar crops in other sections, has turned from the early days to the Pacific coast mills for its paper. Today its purchases are with few exceptions all western. Earliest of the mills to manufacture fruit wraps for the citrus industry was the Floriston Pulp and Paper Company, located at Floriston, California, in the mountains above Lake Tahoe. Some of the difficulties faced in those pioneer days when surmounted laid the groundwork for the present high quality products. The first light weight tissue made

at this mill was machine glazed. It was turned out by an old "Dutch" or "Yankee" machine (called by both these names). One large fourteen foot dryer was used, and one embossing roll.

The Crown Willamette Paper Company was second to enter this market of the western mills with its plant at Camas, Washington. This was about 1910. With the market expanding as it did from this time on, the establishment of the California-Oregon Paper Mills plant in Los Angeles in 1916 became feasible. Ten years later the California Fruit Wrapping Mills came into the field with its mill at Pomona.

An interesting angle on the development of the California Fruit Wrapping

mills was the fact that at the beginning freighters carrying large tonnages of citrus fruits to Sweden and other Scandinavian ports returned without cargo more times than not. It was found an economic move to load with pulp on the return trip which was in turn converted at the Pomona mill into fruit wraps. The growth of the citrus industry has been so great that pulp is purchased now from the northwest in as large quantities as from foreign countries.

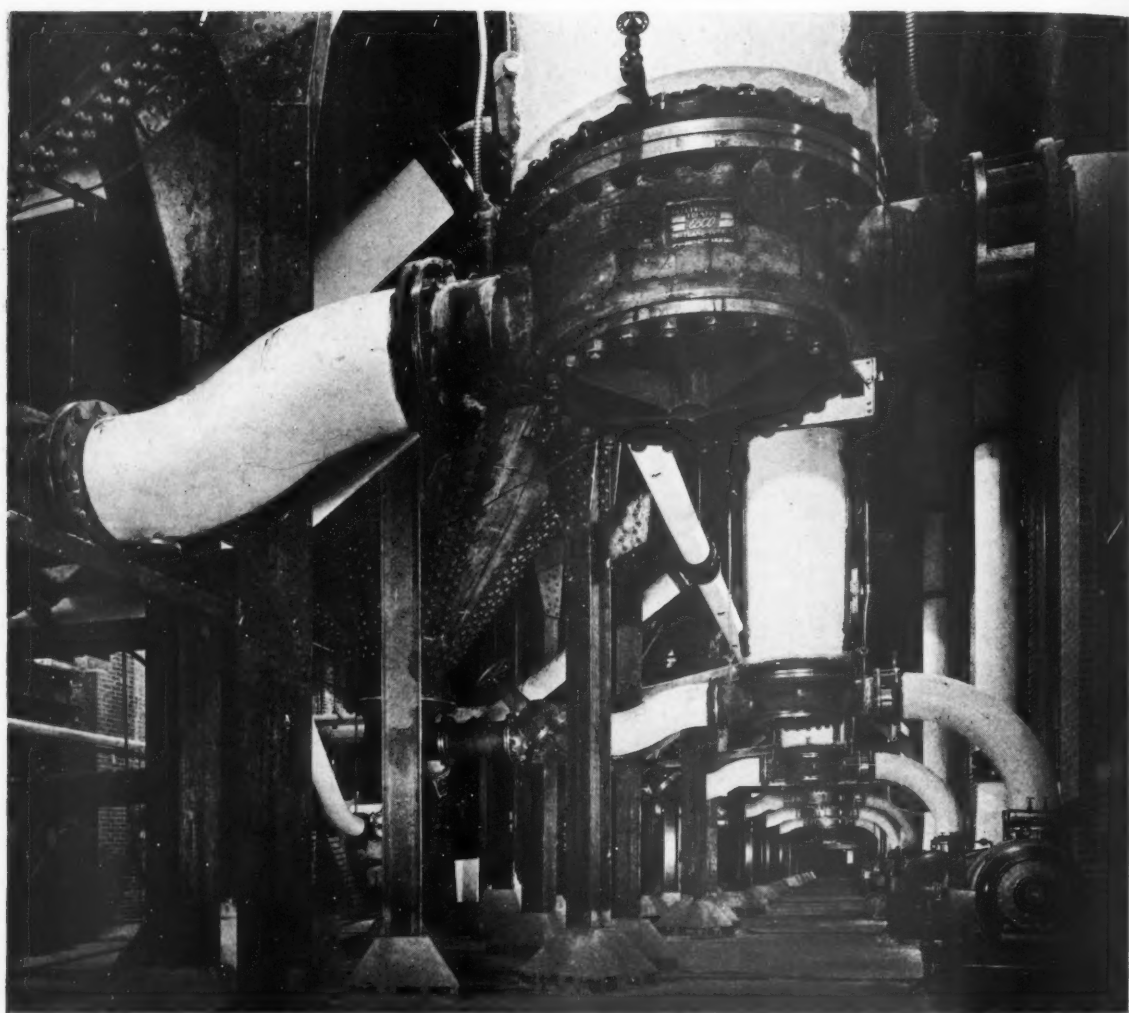
No exact data is available regarding the volume of citrus wraps used by the California citrus industry annually. However, definite figures are available from the California Fruit Growers Exchange which today represents eighty per cent of the industry. From the records of this exchange going back forty years the following estimation of the total California crop and the total tonnage of fruit wraps used for the years listed is made:

Another large annual purchase made by the California citrus industry from the paper mills is the purchase of paper for labels and box ends. A rough estimate of the value of the paper used annually for this purpose runs well over \$100,000.

	Carloads of citrus fruit shipped	Tons of citrus fruit wraps used
1895-96	23,670	2,700
1905-06	61,380	7,000
1915-16	67,480	7,700
1925-26	86,930	9,900
1930-31	108,540	12,300
1935-36	107,200	12,200



WRAPPING SUNKIST LEMONS with citrus wraps made by Pacific Coast paper mills » » » It is estimated that over 12,000 tons of fruit wraps were used by the Southern California citrus industry in the 1935-1936 season, all of which was manufactured on the Pacific Coast.



Stainless by *ESCO*

Six *ESCO* circulating systems, with indirect heating, installed in the world's largest bleached sulphite mill, with a rated capacity of 450 tons per day . . . the SOUNDVIEW PULP COMPANY, EVERETT, WASHINGTON

ELECTRIC STEEL FOUNDRY CO.

Portland, Oregon

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Seattle, Washington

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Five Months Pulp Imports Up 15.4%

Although imports of wood pulp during 1936 reached an all time record and were 17.5 per cent higher than 1935 imports, the imports of all grades of wood pulp for the first five months of 1937 exceeded those for the same period in 1936 by 15.4 per cent, a new record.

Five months imports of wood pulp into the United States totalled 924,274 short tons compared with 800,808 short tons in the same period of 1936, an increase of 123,466 short tons.

Of this total chemical pulp imports accounted for 833,903 tons and groundwood 90,371 tons in the first five months of 1937, as against 720,463 tons of chemical pulp and 80,345 tons of groundwood in the same period of 1936.

Imports during May of this year amounted to 191,590 short tons of chemical pulp valued at \$8,121,362, compared with 148,840 short tons valued at \$5,844,657 in May 1936, and compared with 108,625 short tons valued at \$5,114,937 in April of this year.

May imports of bleached sulphite pulp totaled 47,442 tons valued at \$2,500,655; unbleached sulphite, 71,788 tons valued at \$2,615,373; unbleached sulphate, 60,138 tons valued at \$2,254,465; bleached sulphate, 11,451 tons, valued at \$711,136; and, soda pulp 771 tons valued at \$39,733. Groundwood imports were 21,484 tons of a value of \$453,141 in May.

Finnish Exports Up

Exports of wood pulp from Finland for the first three months of this year increased over the corresponding period of 1936. The first three months total was 175,565 metric tons compared with 158,772 metric tons in the first three months of 1936.

Sulphate pulp exports declined in the first three months as compared with the 1936 period with 58,598 metric tons compared with 77,111 tons. Groundwood also declined this year dropping from 70,503 tons to 59,044 tons. The increase in exports lay entirely in the sulphite group.

Orders on hand by Finnish pulp mills for chemical pulp increased from 1,962,000 metric tons on March 31, 1936 to 2,236,000 metric tons on March 31, 1937.

Canadian Pulp Exports Mounting

Exports of wood pulp from Canada during the first half of 1937 increased 23.8 per cent on tonnage and 36.1 per cent in value over the first half year exports in 1936.

All grades of pulp exported amounted to 434,384 short tons valued at \$19,605,726 in the first six months of this year as compared with the 350,690 short tons valued at \$14,414,466 in the first half of 1936. This is an increase in tonnage of 83,694 tons and an increase in value of \$5,191,260 over the 1936 first half exports.

Exports for the entire year 1936 increased 13.8 per cent over the 1935 figures.

The average monthly exportation of wood pulp from Canada this year has been 72,397 tons compared with the average monthly export tonnage for the first six months of 1936 of 58,433 tons.

U. S. Foreign Trade in May

Imports of paper and paper manufactures during May reached a value of \$11,576,938, an increase of 5 percent over the preceding month and 13 percent over May, 1936. Newsprint paper as usual accounted for the bulk of these imports. May receipts of this item totalled 279,936 tons, valued at \$10,348,263, an increase in volume of 6 percent over both the preceding month and the corresponding month of 1936. Reflecting the higher prices in effect the value of the May receipts exceeded those of May 1936 by 11 percent.

Imports of other classes of paper and board dropped off slightly (3 percent) in aggregate value compared with April, but were 33 percent higher than during May of last year. One of the few items which failed to reach the level of either the preceding month or the corresponding month in 1936 was kraft wrapping paper. May imports of this particular class were 40 percent under the amount recorded for April and 15 percent under May 1936. Offsetting this decline to some extent, May receipts of greaseproof and waterproof papers were more than double those recorded for either of the other two months. Other outstanding increases compared with last year occurred in receipts of "other printing papers", tissue papers, writing papers, cigarette paper, and pulpboard in rolls. The aggregate value of imports of paper and paper products (exclusive of newsprint) came to \$1,228,675 during May as against \$1,263,126 in the preceding month and \$925,112 for May 1936.

Imports of wood pulp into the United States picked up considerably during May, the aggregate volume for the month — 213,074 tons — exceeding any other month since the first of the year and surpassing receipts for the corresponding month last year by 27 percent. The rise in imports of unbleached sulphite during May are particularly noteworthy, receipts exceeding those of May 1936 by 50 percent. Imports of unbleached sulphate (kraft) pulp, bleached sulphite, and mechanical pulp were between 15 percent and 20 percent higher than a year ago. A decrease of 387 tons in receipts of soda pulp was more than offset by a rise of 2,972 tons in bleached sulphate.

Imports of pulpwood during May were 16 percent higher in volume than the amount recorded for the corresponding month last year. Imports of waste, however, were less than in the preceding month of May, 1936. Imports of rags declined approximately 25

percent compared with either of the other two months. Imports of other waste was 12 percent higher than during May 1936 but was nearly 20 percent under the volume of the April receipts.

Total imports of paper base stocks during May were valued at \$9,906,257 comprising: 213,074 tons of wood pulp valued at \$8,574,503; 73,350 cords of pulpwood valued at \$644,859; and 17,816 tons of rags and other waste valued at \$686,895.

Exports of paper and paper products continued to show an upward trend during May, according to figures just released by the Forest Products Division of the Bureau of Foreign and Domestic Commerce. The aggregate value of these shipments amounting to \$2,981,900 surpassed those of the preceding month by 17 per cent and were 51 per cent higher than during the corresponding month in 1936. While this increase compared with a year ago was due to some extent to higher prices, a comparison of those items for which weight as well as value was recorded shows an average increase in volume of 31 per cent.

Nearly all classes contributed to the rise in the May exports compared with a year ago. Among the leading items in the schedule, we find an increase of 61 per cent in writing paper and 47 per cent in overissue news. Some of the largest increases proportionately appeared among such minor items as kraft wrapping, bristols, blotting paper, filing folders, envelopes and vulcanized fiber.

In the board group, boxboards failed to attain to the level of May, 1936, although showing a rise of nearly 50 per cent over April. Shipments of other paper boards, however, were 33 per cent above a year ago, sheathing and building papers 53 per cent higher, and fiber insulating board 34 per cent higher. Among the few classes which failed to attain the level recorded for May, 1936, were newsprint paper, boxes and cartons, hanging paper, wallboards, boxboards and cover paper.

Exports of paper base stocks during May for the first time closely approached exports of paper and paper products in value. The month's exports reached an aggregate value of \$2,246,731 as against \$1,354,816 in April and \$870,782 during May, 1936. Shipments comprised 18,176 tons of bleached sulphite, 11,940 tons of unbleached sulphite, 390 tons of other wood pulp, 1,928 tons of rags, and 5,306 tons of other waste. The rise in the May shipments was largely due to the increased amounts of bleached and unbleached sulphite exported that month which more than doubled the amounts recorded for May, 1936. Exports of rags of a value of \$50 per ton or over also nearly doubled, and exports of other waste was nearly treble the amounts recorded for May, 1936.

Frampton Speaks To Rotarians

Speaker at the Pomona Rotary Club luncheon latter part of June was Charles G. Frampton, plant manager of the California Fruit Wrapping Mills of Pomona, California. Mr. Frampton spoke on the history and development of paper making and the establishment and growth of the Pomona plant of his company.

SULPHUR

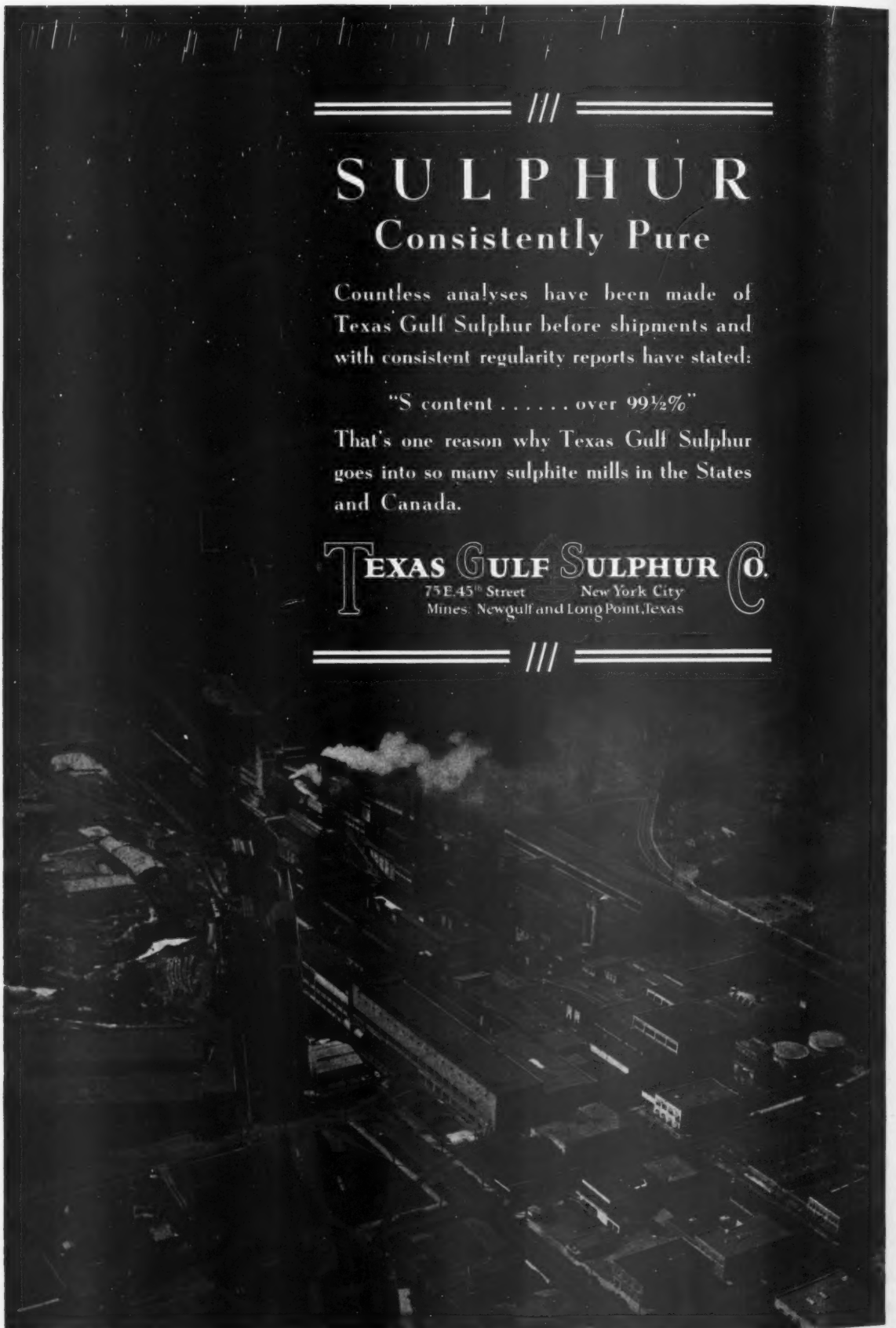
Consistently Pure

Countless analyses have been made of Texas Gulf Sulphur before shipments and with consistent regularity reports have stated:

"S content over 99½%"

That's one reason why Texas Gulf Sulphur goes into so many sulphite mills in the States and Canada.

TEXAS GULF SULPHUR CO.
 75 E. 45th Street New York City
 Mines: Newgulf and Long Point, Texas



Use of Lightweight Papers for Airmail

West coast paper companies are making enquiries into the lightweight paper field developed by the growing air commerce of the United States and Canada.

Already there is said to be a good demand for special lightweight papers suitable for sending as much material as possible by air mail within the weight limits set by the extra postage rates.

Interest in this development has been quickened in Canada by expansion of air lines and the organization of Trans-Canada Air Lines, which will be operating a full transcontinental service next year.

A keen demand for lightweight paper has manifested itself in Vancouver, where Canadian Airways provide connection with American lines and China Clipper services to the Orient.

Some firms with extensive foreign business relations keep down the weight of letters and documents sent air mail by adapting lightweight carbon paper to their purposes. Stationery stores and printing firms report that they have developed business by supplying specially selected and printed copying paper, and other light papers, for air mail letterheads and document purposes.

At least two paper companies, however, are producing light papers especially processed and produced specifically for air mail use. For several months Howard Smith Paper Mills, Ltd., have been putting out light "air mail bond" type of paper. Pacific Mills, Ltd., in British Columbia, has shown some interest in this development, but so far have only made enquiries.

The Howard Smith company claims to have developed the paper to a point permitting eight sheets with envelope to be sent at the half-ounce air mail rate. Within the last few weeks Rolland Paper Company, another eastern Canadian mill, has brought out a special air mail paper under the selling name of "Skyway Bond." Both sheets and envelopes are of specially processed lightweight, non-watermarked paper, and tests have determined that four quarto-sized sheets with envelopes can come within the half-ounce basic rate limit for long distance air mail.

Hawley Participates In Celebration

Practically the entire staff of the Hawley Pulp & Paper Company office was dressed in gay '90 gowns or in buckaroo shirts and bandanas early in August, in honor of the Territorial Days celebration Aug. 20-21, at Oregon City. It is understood there was considerable disappointment and consternation in the city because of the fact that Carl Braun, vice-president and manager, could not be induced to grow a beard along with the rest of them.

Wolf and Porter On European Trip

Robert B. Wolf, manager of the Pulp Division, Weyerhaeuser Timber Company and Oliver M. Porter, secretary of the United States Pulp Producers Association, sailed from New York July 21st for a several months trip to European pulp producing countries.

Mrs. Wolf and Mrs. Porter accompanied their husbands.

More on Oregon's New Accident Rate

In the July number appeared a news story concerning the recently reduced accident insurance rate for the pulp and paper industry in Oregon. Through the courtesy of J. D. Berwick, comptroller of the Oregon State Industrial Accident Commission his letter amplifying the July news story appears below. It is evident from Mr. Berwick's letter that the Oregon commission is doing thorough, intelligent work, and has been successful in assisting in reducing the number of accidents in the pulp and paper industry of Oregon.

A. H. Hunter, O. R. Hartwig, and T. Morris Dunne are the commissioner members of the Oregon State Industrial Accident Commission with headquarters at Salem.

Mr. Berwick's letter:

"We have your letter of July 7, in which you refer to the paper and pulp manufacturing rate for accident insurance effective July 1, 1937, and we note that you desire to have us comment upon the factors involved which made it possible to reduce the rate from \$3.25 to \$2.85 per \$100 payroll.

"The Commission in 1931 made an installation of tabulating equipment which made it possible to accumulate rate studies, and now that we have sufficient data for the period July 1, 1931, to June 30, 1935 (4 years), we feel justified in basing our rate structure upon these correlated rate studies. In other words, contributions received and accidents occurring within a given time are compared together to determine the cost.

"The Commission also has an actuary

study which shows the trend, which information is accumulated monthly, and we can determine on very short notice with only a little additional work and study what the causes are to make the cost affect the rates. Sometimes a favorable trend is caused by an increase in wages to the workmen. This naturally increases the total payroll of the employer and also increases his contribution to the Commission.

"The Commission has also entered into a very definite policy toward reducing accidents, and has promulgated safety codes and rulings covering safety work and safety standards. This also has been supplemented by posters, circular letters, and additional safety engineers at work in direct contact with the larger employers. Our statistical department has also assisted them in determining causes and nature of accidents in industry, giving them the monthly record in all the main industries. The Commission feels that it is doing its part in every way to make studies of the causes of accidents, and is determined to prevent as many of them as possible.

"The actuary study which we have that covers the manufacturing of pulp and paper shows that as of December, 1935, the basic cost rate to the Commission for this type of industry was \$2.83, but had increased to \$2.88 as of December, 1936. However, our correlated study which we actually use now to determine our rates shows that the basic cost rate is practically the same as the actuary cost rate as of December, 1935."

Austin Company Obtains Clear Well Contract

A contract for the construction of a million and a half gallon clear well adjoining the filter plant of the Camas, Washington mill of the Crown Wilmamette Paper Company Division of Crown Zellerbach Corporation, was awarded to the Austin Company of Seattle.

The clear well will be of concrete, 106 feet in diameter and 24 feet high and will be covered with concrete. It will be constructed by the patented Hewitt method which the Austin Company has exclusive license to employ on the Pacific Coast.

It will provide storage for water at times when the mill demand is low and will assist in maintaining an even flow of water into the paper mill.

A Lot of Roofing Made in Five Months

The United States Bureau of Census has recently issued impressive figures on the production of prepared roofing, including asphalt shingles, in the United States during the first five months of this year.

Some 13,243,810 squares (square is 100 square feet) were shipped by roofing manufacturers up to the end of May. The Bureau estimates that with an average of fifteen squares to the house some 882,820 new and old homes must have received roofs.

Carrying the statistical figuring along they determined that the prepared roofing manufactured and shipped in the first five months would cover 47½ square miles or more than twice the area of Manhattan Island.

Penn Salt Issues Caustic Soda Booklet

An attractive booklet containing pertinent information concerning the chemical and physical characteristics of caustic soda was recently issued by the Pennsylvania Salt Manufacturing Company. One section of this booklet is devoted to the proper methods of handling the various grades offered to the trade.

The Penn Salt organization produces caustic soda on the Pacific Coast in the Tacoma, Washington plant of its subsidiary, the Pennsylvania Salt Manufacturing Company of Washington.

The History of the Vortrap

by HORACE FREEMAN*

The Vortrap is a piece of equipment developed and designed for the purpose of removing undesirable impurities from paper making stock.

In the year 1932, the writer's attention was drawn to the pressing need for improvements in technique for removing particles of ground knots from groundwood pulp. Every paper maker knows that riffles, screens and high speed centrifugal devices have been employed and he knows their limitations. Experimental work with the object of developing more satisfactory equipment was initiated in the Research Division of the Consolidated Paper Corporation at Wayagamack Mill, Three Rivers, P. Q., in 1933 and in December of that year a single Vortrap was installed on unbleached kraft pulp. The research and development of this device have been described in a paper on "The Removal of Dirt From Paper Making Stock" by H. Freeman and C. H. Skelton, given to the technical section of the Canadian Pulp & Paper Industry in Montreal January 29, 1937.

In February, 1934, a complete installation of Vortraps was made on No. 3 news machine (25 tons capacity, 6 traps) at the Laurentide mill of the Consolidated Corporation. This installation demonstrated that the Vortraps operate much more effectively than the riffler, removing one pound of dirt (bone dry basis) from each ton (B. D.) of news print. This rejected material analyzes 33 per cent ash and 67 per cent combustible. In other words, one third of the dirt removed is sand which comes from grindstones and from the mill water supply, and the remaining two thirds is woody particles such as ground knots and fibre bundles.

In January, 1935, as a result of the successful operation on the news print machine it was decided to apply the device on the kraft machine at the Wayagamack mill, Three Rivers, of Consolidated Paper Corporation. This installation of nine traps on No. 2 fourdrinier handling 45 tons of kraft bag and other kraft papers daily, was so successful in eliminating complaints originating from the presences of grit and sand in the paper that it was decided to equip the rest of the machines in this mill and further installations accordingly were made on No. 1 fourdrinier (9 traps, 45 tons capacity), and on the three Yankee machines each having a capacity of 15 to 20 tons of waxing tissue, bleached and unbleached light weight kraft papers and sulphite and kraft mixtures (5 traps each). Followed an installation of nine traps on kraft pulp for the wet machines.

The cost of operating the device has worked out at 2c per ton of paper manufactured and it is said that in passing once through the device 93 per cent of all matter heavier than the pulp is removed provided that this foreign matter be larger than colloidal size.

*Technical Director, Consolidated Paper Corporation, Three Rivers, Quebec.

In view of the novelty of the procedure and of the device applied to pulp and paper processes, it was decided to take out the necessary protection and to make it available to the industry. Accordingly, in the latter part of 1936 arrangements were made under which Nichols Engineering & Research Corporation were appointed representatives for the sale of the Vortrap in Canada and in 1937 this company was commissioned to take over the handling of the device in the United States.

In addition to the use on paper making stock the Vortrap has been found useful in refining such material as china clay, and milk of lime to be used for bleach liquor. It has been found that when the Vortrap is operating on pulp containing titanium filler that the loss of the filler is less than 1 per cent of the total added and it is found that the fraction of the filler removed comprises oversize and undesirable particles.

The Vortrap was subsequently used for classifying pure clay suspensions containing no pulp. In like manner oversize particles are removed from milk of lime without excessive loss of the desirable portion.

The following Vortrap installations have been made in Canada:

- (1) Canada Paper Company, Windsor Mills, Quebec.
6 Vortraps operating on 30 tons per day of kraft pulp, installed for a consistency of .5 per cent.
- (2) Howard Smith Paper Mills, Ltd., Cornwall, Ontario.
2 Vortraps operating on machine making 10 to 15 tons per day of soda and sulphite specialties, installed for .75 per cent consistency.
- (3) Alliance Paper Mills, Ltd., Merriton, Ontario.
One Vortrap operating on Bird Screen rejects from furnish to machine making greaseproof and glassine.
- (2) Provincial Paper, Ltd., Port Arthur, Ontario.
Two Vortraps for experimental purposes.

The following sales of Vortraps have been made in the United States.

- (1) Scott Paper Company, Chester, Pa.
One Vortrap, bronze.
- (2) St. Regis Paper Company, Defereit, N. Y.
Nine Vortraps, cast iron.
- (3) St. Regis Kraft Company, Tacoma, Wash.
Ten Vortraps, bronze.
- (4) St. Regis Kraft Company, Tacoma, Wash.
One Vortrap, cast iron.
- (5) Weyerhaeuser Timber Company, Everett, Wash.
One Vortrap, bronze, for experimental purposes.
- (6) Weyerhaeuser Timber Company, Longview, Wash.
One Vortrap, bronze, for experimental purposes.
- (7) Rainier Pulp & Paper Company, Shelton, Wash.
One Vortrap, cast iron, for experimental purposes.

Cromwell Elected Johns-Manville Vice-President

Alexander Cromwell, manager of Pacific Coast operations for the Johns-Manville Products Corporation, which operates a roofing and asbestos paper mill at Pittsburgh, California, was recently elected a vice-president of the company.

"Something Wrong Here"

Under the above headline the Seward, Alaska, Weekly Gateway published the following editorial on July 27th.

"The announcement that the price of news print will be boosted from \$42.50 per ton to \$50 and possibly more, has evoked the wrath of all publishers throughout the nation.

"Dr. Charles M. Herty, staunchest proponent of all southern news print, declares that the South, with 200,000,000 acres of pine, is much more richly endowed than Canada.

"Canadian paper, which dominates the American continent, represents a \$1,000,000,000 monopoly. Means are being sought to break the grip of this monopoly.

"But the striking fact is that eyes are turned to the South, where all timber is privately owned, instead of Alaska, which is supposed to be capable of supplying all of the pulp required."

News Print Production For June

Production in Canada during June, 1937, amounted to 310,871 tons and shipments to 311,507 tons, according to the News Print Service Bureau. Production in the United States was 78,500 tons and shipments 76,255 tons, making a total United States and Canadian news print production of 389,371 tons and shipments of 387,762 tons. During June 29,812 tons of news print were made in Newfoundland, so that the total North American production for the month amounted to 419,183 tons. Total production in June, 1936, was 378,509 tons.

The Canadian mills produced 293,244 tons more in the first six months of 1937 than in the first six months of 1936, which was an increase of nineteen and seven-tenths per cent. The output in the United States was 9,908 tons or two and two-tenths per cent more than in the first six months of 1936, and in Newfoundland 24,435 tons or fifteen and eight-tenths per cent more, making a total increase of 327,587 tons, or fifteen and six-tenths per cent.

Stocks of news print paper at Canadian mills were reported at 67,438 tons at the end of June and 14,944 tons at United States mills, making a combined total of 82,382 tons compared with 80,773 tons on May 31, 1937.

Certain-teed Shows Profit

The Certain-teed Products Corporation reports for the six months ended June 30 last earnings amounting to \$170,072, compared with a loss of \$205,756 for the same period a year ago, and constituting the best earnings record for the first half of a year since 1927. Net sales amounted to \$8,712,844, an increase of 11.3 per cent from the similar period in 1936.

Everdur White Water Carrying Lines: Part of the Everdur Equipment built by Alaskan Copper Works, Seattle, Washington, for the Soundview Pulp Company's Everett Mill.



5 Good Reasons

for using 50,000 pounds of Everdur in Soundview's New Everett Mill

EVERDUR SILICON BRONZE was selected for the stock and white water lines of the Soundview Pulp Company's new bleached sulphite pulp mill at Everett, Washington. Here are the reasons:

- 1 Where Everdur is used, the costly and troublesome rust problem is eliminated.
- 2 Everdur resists the tendency to "slime up."
- 3 Resistance to flow is reduced; stock can be sluiced through at higher velocities.
- 4 This high-strength, corrosion resistant, copper-silicon alloy has excellent working qualities—can be formed, welded and machined by all usual shop and erecting methods—is available in all commercial forms.

5 Everdur is reasonably priced.

Everdur has found many economical adaptations in the pulp and paper field. Equipment and accessories which have proved the ultimate economy of this moderately priced metal include: Save-all pans, troughs, machine vats, head boxes, storage tanks, partitions, filters, seamless tubes, bolts, nuts, screws, and electrical conduit.

The Service Engineering Department of The American Brass Company will be glad to confer with engineers regarding the use of Anaconda Metals in the pulp and paper industry.

27392

"Everdur" is a registered trade-mark of The American Brass Co. registered in the United States Patent Office.



Anaconda Copper & Brass

THE AMERICAN BRASS COMPANY, General Offices: WATERBURY, CONNECTICUT
Offices and Agencies in Principal Cities • In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ont.

SOUNDVIEW PULP COMPANY

EVERETT, WASHINGTON

SELECTED

— FOR THEIR BOILER SETTINGS —

A. P. Green Fire Brick Company
FIRE BRICK

Bigelow-Liptak Corporation
SUSPENDED ARCHES-WALLS

— FOR THEIR PIPE COVERING and INSULATION —

Johns-Manville
INSULATING MATERIALS



THE E. J. BARTELLS COMPANY

1212 Sixth Avenue South, Seattle, Washington
677 No. Tillamook St., Portland, Oregon

Albany Presents Movie of Felt Making

To Be Shown in All Pacific
Coast Production Centers

The pulp and paper makers who were guests of the Albany Felt Company at a dinner in Longview July 30th and in Los Angeles August 7th, discovered that the making of a felt has much in common with the making of pulp and paper. Both are the result of combined scientific control and skilled workmanship.

This insight into the making of woolen felts was revealed by the Albany Felt Company's new sound motion picture, "The Art of Felt Making," with Lowell Thomas as narrator. Technically excellent, this picture captures the interest in addition to being highly educational. It is a most valuable contribution to the industry's knowledge.

Beginning with the shearing of the sheep, "The Art of Felt Making" shows the sorting of the fleeces by highly skilled wool sorters who pick only the finest for paper making felts. Like the paper maker whose sensitive fingers tell him whether his stock has been beaten sufficiently, Albany's wool experts can tell from the appearance and feel of a fleece not only the quality but also the part of the world it came from and the diet of the sheep as well.

Then science takes charge of felt making, working hand-in-hand with those who, through years of practice have become skilled in the painstaking details of felt making. Step by step, with absorbing interest, Lowell Thomas takes his listeners through the processes essential to the making of a fine felt for pulp or paper making.

In addition to showing the several steps in the making of a felt, the Albany Felt Company's complete research and control laboratory is pictured in action making the various tests governing the processes. This control results in the maximum of uniformity in duplicating felts for the same positions on the same machine.

The laboratory men are also shown working on problems sent in for solution by pulp and paper makers throughout the country, as for example, the determination of the best felt washing practice for each mill or the analysis of the mill's water supply. Albany contributes this advisory service to the pulp and paper industry.

Harry H. Stilwell of Portland, Pacific Coast representative of the Albany Felt Company, was host at the Hotel Monticello to some seventy-five men from the three mills in Longview, the Longview Fibre Company, the Pulp Division of the Weyerhaeuser Timber Company and the Pacific Straw Paper and Board Company; and, to ninety men from the five Southern California mills at the Central Manufacturing District Club in Los Angeles. The California Fruit Wrapping Mills, the California-Oregon Paper Mills, the Fibreboard Products, Inc., Pioneer Division, The Flintkote Company, and the U. S. Gypsum Company were all well represented by production men and executives.

Mr. Stilwell will exhibit "The Art of Felt Making" in all pulp and paper mak-

ing centers on the Pacific Coast and will also show it at a dinner meeting of the Pacific Section of TAPPI, probably at the January meeting in Portland.

Felts Discussed

Albany's picture provoked interesting discussions among the men who saw it at Longview and Los Angeles on the proper methods of handling felts to obtain the maximum service. In this way, through the interchange of ideas among operators, the educational value of the motion picture was further amplified.

Most Interesting Facts

In answering questions about felts and felt making Mr. Stilwell gave some highly interesting facts not generally known to the pulp and paper industry.

Wool from approximately 125 sheep is required for one average size felt. . . . On the average Albany secures only 50 pounds of finished felt from 100 pounds of raw wool. . . . With some grades, 100 pounds of raw wool will yield only 30 pounds of finished felt. . . .

The wools used by Albany come from all parts of the world and from all of the principal sheep-raising states in this country. . . . From 1,000,000 to 1,500,000 pounds of wool, consisting of more than 50 different grades, are stored in the Albany warehouse at all times. . . . The fibers range in length from 1½ inches to more than 9 inches. . . .

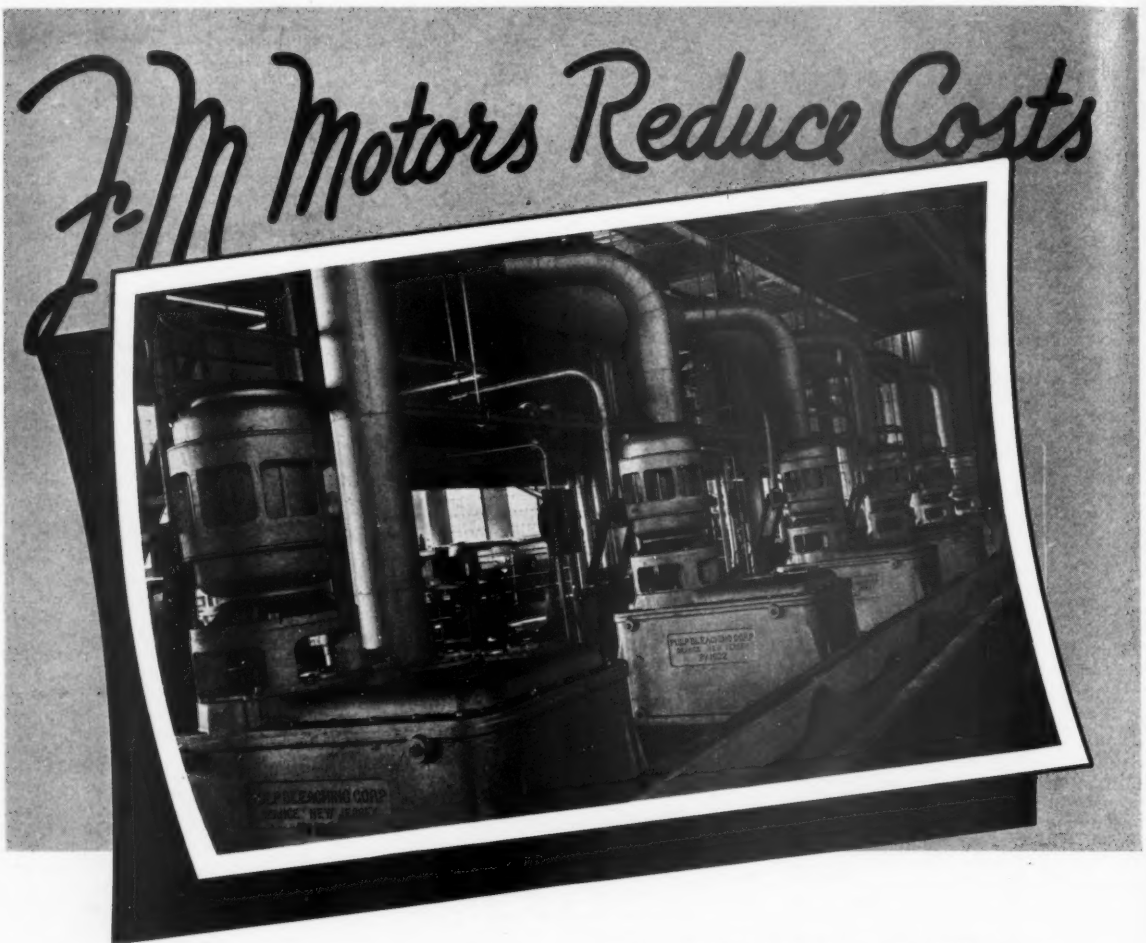
Every felt consists of a blend of at least 2 different grades and some felts have as many as 8 different grades of wool. . . . Some yarns are so fine and light in weight that a strand 4 miles long will weigh barely 1 pound. . . . Albany's maximum sizes are 35 times as heavy. . . . The number of filling threads to the inch in Albany felts range from 4 to 280, the number of warp threads per inch ranges from 8 to 50. . . .

In some of the larger size felts, more than 700 miles of yarn are used and 7 days are required for the weaving. . . .

Albany makes about 1,500 different styles and sizes during a single year, totalling about 6,000,000 square feet. . . . Lengths range all the way up to 225 feet and widths up to 265 inches.



PRODUCTION MEN from the three mills in Longview who enjoyed the first showing of the Albany Felt Company's new sound motion picture, "The Art of Felt Making," at a dinner held July 30th at the Hotel Monticello.



IN WORLD'S LARGEST BLEACHED SULPHITE PULP MILL

- The Soundview Pulp Company chose Fairbanks-Morse motors for their Everett, Washington, plant now exceeding its daily planned capacity of 450 tons.

Not one, two, or even a dozen—but over 350 F-M ball-bearing motors, totalling ap-

proximately 10,000 hp.—are daily proving their “mettle” by greater dependability and lower operating and maintenance cost. F-M ball-bearings give a sustained high overall operating efficiency—they do not burn out and seize the shaft—grease tight bearing enclosures keep the motor clean inside and out—lubrication is required only once a year and is simplified by use of the F-M measured grease-tube.

There is a Fairbanks-Morse ball-bearing motor to fit your needs—talk over your motor problem with our engineers. Bulletin AEB401-108 will give preliminary information.

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FARM EQUIPMENT
STOKERS
AIR CONDITIONERS



MORSE Motors

Rayon • and other CHEMICAL USES OF WOOD PULP •



Rayon at Mid-Year

Low Stocks and Expansion of Production Facilities Features of First Half of 1937

The following summary of the progress made by the rayon spinning industry in the United States during the first half of 1937 is of interest to manufacturers of wood pulp. It is reproduced with acknowledgement from the July number of the Rayon Textile Monthly, published in New York City.

"During the first six months of the present year the rayon yarn manufacturers in this country established a new expansion record. This was undertaken in order to bring capacity up to the present day demand for yarns required by the weaving and knitting mills. Compared with other years the record of 1937 contains proof that the textile trade here fully realizes the advantages to be gained by the use of rayon and rayon staple fiber.

"To give definite consideration to what has been going on in the way of construction since last January, it can be set down that the American Viscose Corporation has been completing additions to the Meadville, Pa., plant, bringing the capacity for acetate rayon yarn production there up to 20,000,000 pounds. This company has also been building a large rayon staple fiber plant at Nitro, West Va. Further evidence of the expansion under way by this company is furnished in regard to the beginning of construction at the new Front Royal, Va., plant for the production of viscose rayon yarn. A plant which will be built in units with an ultimate capacity of 30,000,000 pounds, the first unit is soon to be under construction.

"The expansion policy which is under way throughout the rayon industry is pointedly reflected in the development which has been effected at the Richmond, Va., unit of the rayon division of E. I. du Pont de Nemours Company. This Richmond plant now is rated as a 25,000,000 pound production unit. The du Pont plant in Buffalo is reported as undergoing a thorough revamping and its capacity for production of viscose rayon thereby increased. Further expansion in the du Pont rayon group of mills has been accomplished at Waynesboro, Va., where the du Pont acetate yarns are produced.

"There has been an expansion in the capacity of the Tubize Chatillon plant in Rome, Ga., which is reported to bring the company's capacity above 17,000,000 pounds for viscose rayon and there has also been an increase in the capacity of its acetate yarn department at Rome.

"Celanese Corporation of America, through one of its affiliates has begun an expansion program in the establish-

ment of a plant in Virginia that is to have a capacity of 30,000,000 pounds per year and the first unit which it is reported will represent one-third of this ultimate output is to be under construction in the near future.

"Chambers of Commerce in the southwestern part of Virginia reported the success in getting the Celanese Corp. of America to select a site in Virginia for the establishment of its second unit.

"Industrial Rayon previously announced its intention to build a plant at Painesville, Ohio. Work on this proposition is now going forward.

"North American Rayon Corporation has rounded out the full production program for its plant in Elizabethton, Tenn.

"American Enka Corporation has carried forward its production increase at its plant in Enka, N. C.

"Tennessee Eastman's plant at Kingsport, Tenn., has actively pushed forward their program to keep up with the rapidly expanding demand for its yarns.

"American Bemberg Corporation has also had a large volume demand for its yarns from the fine goods field that made it necessary to increase yarn production to full capacity.

"Some of the remarkable achievements of the past half year in plant expansion have taken place in the case of the smaller producing units. Skenandoa Rayon Company will soon increase capacity at its plant in Utica, N. Y., bringing its output above the 60,000,000 pound per annum point.

"New Bedford Rayon Company's plant at New Bedford, Mass., has increased its production during the past half year. Hartford Rayon has brought its production up to a new high total. Delaware Rayon has increased facilities of its rayon spinning plant and is now at its highest point of production.

"Woonsocket Rayon Company is operating at top capacity. Hampton Company has likewise enjoyed a full production schedule for the first half year. Both Acme Rayon and New Process Rayon are now in operation after temporary shutdowns last year.

"Here we have a summary of the activities which are going on during a year in which industrial trouble has caused a decided dip in steel production, automobile plant operation and the operation in many other branches of industry. With rayon and that division of the textile trade to which rayon yarns are sold—the fine fabrics mills—the first half of this year has been one of general activity.

No Stock Reserves

"Taking a view of the past twenty years for a perspective, there has never been a time before when weavers and knitters have been so eager to get delivery and when the rayon yarn manufacturers have had their stocks of yarn actually "down to the boards." If this business had come to hand, due to some sudden spurt, it might be regarded as indicative of a turn of fashion, and not encourage rayon yarn manufacturers to go forward with their building programs; but it is understood in the trade just why rayon yarns are in such strong demand and that the future holds full promise of continued and increasing call for all of the types of rayon yarn now in use in American textile mills.

"To get the "feel" of the industry as those have it who are responsible for the expenditure of millions of dollars for the purchase of sites, the erection of buildings, of equipment and their ultimate operation, it is necessary to study rayon at long range and then examine it in a "close-up."

Estimate of 1937 Rayon Production

"The long range view shows that for the year 1936 there was approximately 1,300,000,000 pounds of rayon and rayon staple fiber produced in the plants throughout the world. For 1937 it is now estimated, based on the first half years' production totals and estimates that the output of the world's rayon plants will exceed 1,550,000,000 pounds. Plant capacity as projected from present building operations and from the continuance of expansion during the balance of the year, is accounted for as establishing a world capacity production total for 1938 that will reach above 1,800,000,000 pounds.

"This staggering total of "man-made" yarns shows that rayon is indeed stepping up into second place in the list of world fibers, with cotton in the lead from a poundage basis, wool second but losing out rapidly to rayon, and with silk a minor factor in poundage bringing up the rear.

"Of the total world capacity at the end of 1938, American rayon plants are expected to have a capacity that will exceed 450,000,000 pounds or about 25 per cent. This figure must be regarded in a sense separate from any other totals throughout the world as it represents practically the home requirements of the American textile industry. The rayon yarn manufacturers in this country have to depend almost entirely upon domestic demand. This is a very different position than the one occupied by Japan which manufactures yarn and exports a preponderant percentage of yarns and of finished goods.

"From Figures which have been furnished Rayon Textile Monthly and from careful estimates on the entire production of the industry in this country from January 1st to June 30th, inclusive, it is apparent that the production of rayon and rayon staple fiber has exceeded a total of 160,000,000 pounds. From the experience of past years it is shown that during the first six months of the year output of the mills and sales to the trade never reached as high a total as those scored during the second half of a year which takes in the heavy buying for the fall and winter seasons. So it is reasonable to look forward to a higher percentage from July 1st to December 31st.

PROGRESSIVE PERFORMANCE

The Soundview Pulp Company's mill at Everett, Washington, is now the largest single bleached sulphite pulp producing unit in the world. Its normal daily production is in excess of 450 tons. Soundview pulp is recognized in both domestic and foreign markets as a product of outstanding quality.

This mill now contains 168 flat screens
which include 2,352 screen plates.

All screen plates of the new units and two-thirds of those in the old unit have been CRODON plated by Chromium Corporation of America. Practically all of these chromium-plated plates are of the new patented* "OPEN-BACK" construction.

The fact that these units operate well in excess of rated capacity is conclusive evidence of the performance of the screening equipment. Maintained accuracy of slot sizes permits close control of product quality. Long screen plate life and the anti-clogging characteristics of CRODON-plated plates reduce production costs and make for dependable and efficient operation.

CRODON
The Chrome Plate
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*U. S. Patent 2,086,067

Such true tests of performance prove the real advantages and substantial economies of CRODON-plated screen plates . . . outstanding improvements over ordinary plates, either flat or curved.

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Chicago, Ill.

"To those who are asking—where is rayon going and what will the 1937 total of domestic production be?"—the answer is written in the accomplishments of the first half of the year, the sold-up conditions of the mills so far as delivery is concerned and the general trend in fine textiles towards rayons.

Rayon Building Good Name

"All of the advertising that appears in the daily newspapers, fashion magazines and the periodicals that go to the home are now carrying articles on, 'truth in fabrics,' and reports of meetings on consumer leagues, business organizations and even governmental agencies—all seeking to protect the consumer.

"In this relation it is of outstanding importance to note that in the textile trade there has been a leadership shown by rayon yarn manufacturers in bringing the name of their product to the attention of the consumer and in establishing definite names of identification for their yarns and the articles into which they are manufactured so that consumers could use their own discretion in purchasing.

"Rayon has not 'stood to one side' waiting for rules and regulations to be made by impromptu gatherings of social workers, over-zealous consumer organizations, or officials, acting in good faith, but beyond their proper functions.

"Rayon in 1937 is leading the way in educating the public to select goods on their merit. The policy is sound and is keeping rayon in the forefront. The sales records show it. The consumer demand confirms the fact that rayon has won, and holds, the confidence of the public.

"It is because the rayon industry has built up the good name of its product that sales of this fiber go on mounting as they do, year by year, and that a greater and greater plant expansion is being provided to keep the textile mills supplied with the yarn of universal adaptability, as it is now termed. In the summary of the first half year's activity in rayon, it is shown that production has been pushed to its utmost; plant expansion is under way; sales to a larger number of users have been recorded and the products of rayon have been energetically and successfully promoted to the consumer. This leaves rayon well in the lead for popular acceptance as a fiber in the activities of the textile industry in this country. The record for the balance of 1937 is being written, day by day, and it spells more rayon going into a greater number of products.

"In the figures given above regarding the rayon industry there has been included the production of rayon staple fiber in the plants of the United States. For the current year it is now estimated that rayon staple fiber from domestic sources, will exceed 20,000,000 pounds. Last year the record shows a domestic production in excess of 10,000,000 pounds and the importation of 12,000,000 pounds, chiefly from Japan.

Chemical Industry's Chief Customer

"No summarization of rayon is complete without putting before the readers the facts that the rayon industry now constitutes one of the chemical industry's best customers. This is due to the

fact that rayon is a chemically produced product. The use of more than five pounds of chemicals in the various processes, in converting wood pulp or cotton linter, into yarn are needed for each pound of rayon produced. This in itself constitutes a total for chemicals which has no equal in any other division of industry.

"It is not hard for the chemical industry to concentrate its attention on the rayon industry of which there are seventeen rayon yarn producing concerns in this country operating a total of twenty-nine plants, with a total capacity of 350,000,000 pounds in 1937 and a capacity estimated at the end of 1937, as above reported, of 450,000,000 pounds.

"There is a second market for chemicals, and dyestuffs, that depends upon the rayon industry and this takes in the fine textile fabrics finishers and accounts for close to two thousand plants engaged in bleaching, dyeing and finishing fabrics.

"This is the great field in textiles where progress is being made and where rayon is making history day after day.

"Rayon Textile Monthly has collected the evidence of the six months progress in the industry. There is no division of the trade where the report does not show, increased acceptance over the same period in 1936. Rayon moves on to greater production and sales records."

Japan May Produce Rayon Pulp From Reeds

Local press reports state that a patent for making rayon pulp from reeds grown in North China and Manchuria, has been granted in Japan to the Muto Chemical Laboratory, Tokyo. The process, it is stated in the press report, will be utilized by the Kanegafuchi Cotton Spinning Co., in its reed-pulp plant in northern Manchuria. (Assistant Trade Commissioner Carl H. Boehringer, Tokyo.)

British Rayon Production

Production of rayon yarn, staple fiber, and rayon waste during May amounted to 12,180,000 pounds, compared with 13,670,000 pounds in the preceding month and 12,970,000 in May, 1936. The cumulative total for the 5 months was 61,830,000 pounds, compared with 59,880,000 in the corresponding period of 1936. (From the American Consulate General, London.)

Japan Undersells American Rayon

Although Japan passed the United States in 1936 as the world's largest rayon producer, the Rayon Organon points out that the United States is still the largest rayon consuming country.

Says the Rayon Organon, "With Japan supplying large quantities of rayon staple and waste to the United States currently, it may be observed that a large part of the Japanese rayon cellulose requirements comes from the United States in turn (largely from Pacific Coast pulp mills—Editor). Thus cellulose is shipped from this country to Japan, is spun into rayon staple and waste, and is returned to the United States at quotations under the domestic market, duty paid. The same thing happens with American cotton, of course. Both of these instances emphasize the really low manufacturing and labor costs which are found in Japan today."

Tight Situation In Rayon Industry

The Rayon Organon for July says in part, "We continue to expect a tight rayon situation at least through the Fall. Because of a short supply situation, rayon was not able to go on the consumption spree which has been experienced by some of the other fibers over the last nine months. Perhaps by reason of this situation, we find that stocks of rayon yarn are very low, and that stocks of rayon woven goods are of easily manageable size. Further, a large bulk of rayon goods are style goods as opposed to the staple or year-to-year type. Thus the Fall weaving demand for rayon will be predicted on a large range of new fabrics—last season's fabrics, of which the stocks are fortunately low, may be passed. For these reasons of manageable cloth inventories, short yarn supply, and the style nature of rayon goods, it is believed that the demand for rayon will continue to be very firm."

Rayon Pulp In South

Under the above head the Business Week in the July 24th issue, ran the following news story:

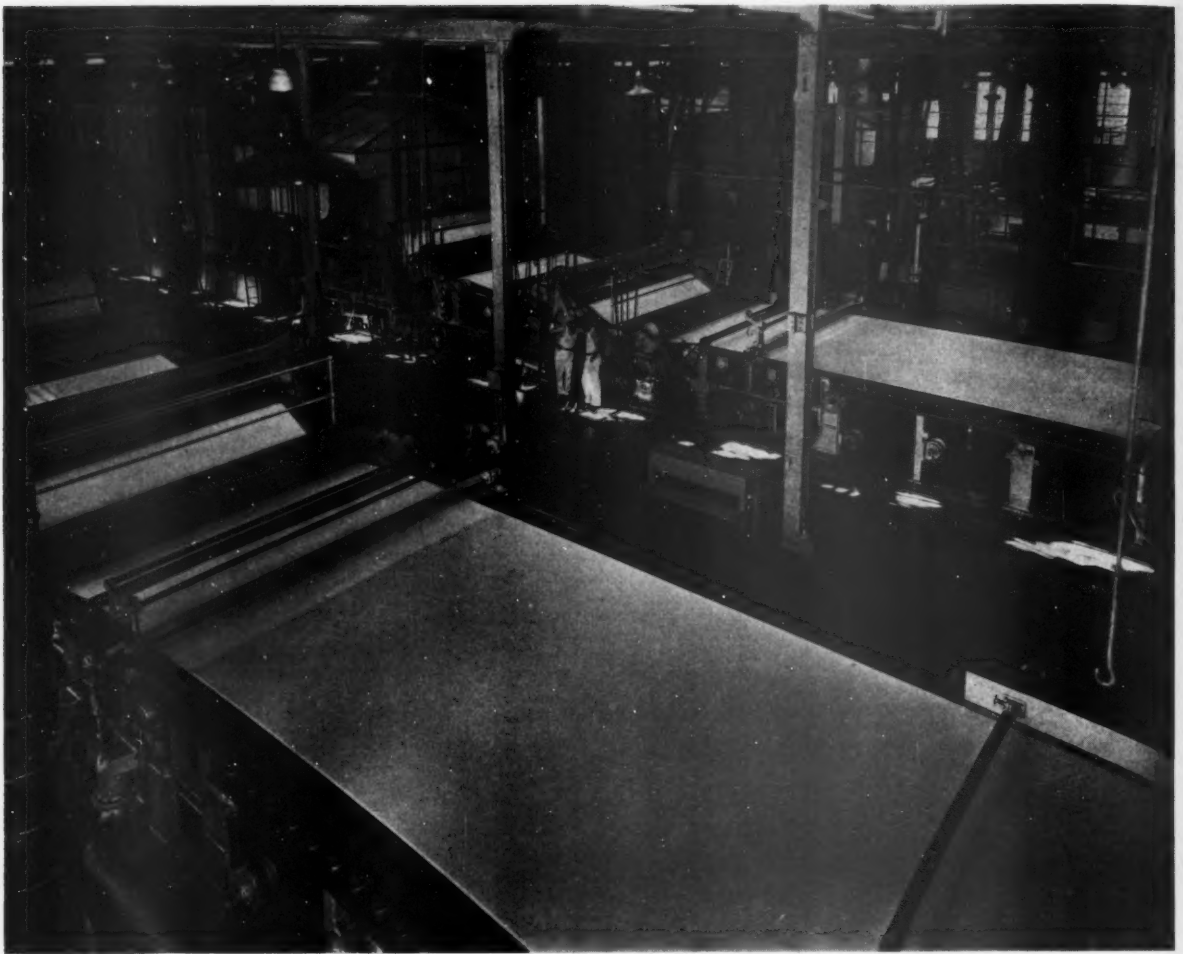
Surprising as it may seem, there never has been a mill in the South to make sulphite pulp for rayon manufacture, although the Southern pine is available and a large number of rayon mills are down South. Pulp has been carried all the way from the West Coast and from New England to the market in the deep South.

First move of the pulp makers to the scene of manufacture now is on, with the decision by three lumber products companies from the Pacific Northwest to build a new plant in Fernandina, Fla. The Rainier Pulp & Paper Co., Olympic Forest Products Co., and Gray's Harbor Pulp & Paper Co. are the firms interested, and their plans call for an initial investment of \$6,000,000.

Rayon From Hemp

It is reported in the rayon publications that the Rutstein Laboratory and Library of Newark, New Jersey, has developed and patented in this country a process for making cellulose from hemp.

The cellulose, called "Musa," has been used experimentally in making both viscose and acetate products.



Recent Rice-Barton installation
for Soundview Pulp Company



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WORCESTER, MASSACHUSETTS
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Staple Fiber of Growing Importance in Germany

Synthetic Fiber Production Increased Three Times in Three Years

In Volume III, No. 12, of the Bulletin of the Hamburg World Economic Archives, published in Hamburg, Germany, appeared the following article of interest to wood pulp producers. The article, signed by a Dr. v.M., was titled, "The Importance of Staple Fibre as a Textile Raw Material—Structural Shifts in the German Raw Textile Supply."

"On March 24th the Reich Exhibition of the German Textile and Clothing Industry was opened, showing on a broad scale the importance of synthetic textile fibers for the textile industry and the national economic system. From this point of view, the Four Year Plan with its aims represents the axis and center of this great textile show. It is true, the exhibition also gives a transverse section of textile history, and the display of old German textile products imparts a lively impression of the cultural level of textile work from the beginnings of the development of this industry right up to the present, but this part of the exhibition, like the statistical illustration of the national economic importance of the textile industry, in which 20% of the industrial population is employed, only provides an introduction to the present-day show, which illustrates pictorially the aim of the Four Year Plan and the progress of the reorganizing process in the textile industry.

"What the Leipzig Fair had already shown, the manifold possibilities for the use of staple fiber, the technical preparation and working up of which meet the demands of almost all special branches of the textile industry, was proved anew by this exhibition. This pictorial representation of the importance and efficiency of the staple fiber industry is supplemented in a weekly number issued at the same time by the Institute for Business Research, by a precise analysis of the profound changes in the raw material supply of the German textile industry.

"The investigation shows that the proportion of home raw materials in the whole raw material consumption of the textile industry amounts at present to about 17%, and with the addition of the rags used, even amounts to about one-third. To this decrease in the dependence upon import, the various home raw material sources contribute. German agriculture supplies 47,000 t. of vegetable fibrine, as against 8,400 t. in 1933; the wool supply was raised by one-fifth since 1933, the flax production increased tenfold, and the production of hemp raised above the figure at the turn of the century. To a large extent these measures of production increase were corrections of a neglect of home raw material sources in previous years. As early as 1925 the home production of agricultural textile vegetable fibrines had reached 38,600 t.; in the last industrial boom period, this production shrank, up to 1928, to less than half, i. e., 18,800 t.: a proof that the catastrophic decrease

in production was by no means only conditioned by the economic crisis. The progress that has been made since 1933 is made clear by the following data.

"In 1933 only 3 million kg of flax was obtained from home production, and 85% of the demand had to be covered by imports; in 1936, 75% of the consumption, which has risen from 21 million kg to 40 million kg, is covered from home production. From 1933 to 1936, the hemp production rose to such an extent that the supply quota out of home production sprang from practically 0% to 12—13%. In the same period, the sheep stock has risen from 3.38 million head to 5 million, and may be further tripled by a process of steady development. The increased use of synthetic spinning-fibers has proved to be of even greater importance than this other progress.

"The production of artificial silk and staple fiber in Germany, according to the figures of the Institute for Business Research, has grown from 32,000 t. in 1933 to about 100,000 t. in 1936, and this development accounts for the fact that the raw textiles were only 25.9% in value of the total German raw material import in 1936, as against 31.7% four years ago.

"In the third number of the publication "Der Vierjahresplan" (The Four Year Plan) further interesting figures of the present state of German staple fiber production are given. They show that the total capacity of the German staple fiber industry, which in 1933 amounted to about 275,000 kg a month, will have risen by January, 1938, to 11-12 million kg a month.

"In 1936 it was possible to produce 42 million kg of staple fiber; for 1937 a production of from 70,000-75,000 t. is reckoned with, which corresponds to about 8.9% of the German raw textile consumption, excluding old materials, and is equivalent to over 20% of the German cotton demand. Thus, measured against the share of home raw materials in the German raw textile consumption, about 50% of the home production is staple fiber.

International Comparison of Production

"The idea that staple fiber is simply a product of the German foreign exchange shortage, designed to replace, well or badly, the natural raw material which no longer comes to Germany in sufficient amounts, is erroneous. In actual fact staple fiber is the result of a technical development of more than two decades, and its use is by no means restricted to the raw-material-poor countries.

"How greatly staple fiber has caught on in the traditional agricultural raw material countries or the raw textile finishing districts, is shown by the fact that the

U. S. A., with its wealth of cotton, manufactured 1814 t. of staple fiber as early as 1935, more than seven times the 1929 production, and that in 1936 the production in England reached 12.2 mill. kg. or 150% more than in the previous year. When the cellulose works now being built are completed, it is calculated that this production will be doubled to 22-23 million kg. Italy, too, the chief producing country in 1935, with 35 million kg, has been able to increase production to 50 million kg, according to the figures given in the financial report of the 'Snia Viscosa, Turin.'

"That Germany now becomes the leading producer is perfectly understandable, in view of the international position of the German textile production, and of the extent to which the textile consumption of the German population exceeds that of the Italians. It must be remembered in this connection that in 1935 Germany had not yet reached the artificial silk consumption per head of population which other countries had. While Great Britain consumed 1.1 kg of artificial silk per head, U. S. A. 0.9 kg, Italy 0.85 kg, and Japan 0.75 kg; this consumption quota in Germany only amounted to 0.68 kg.

These figures show how largely the German measures for the increase of synthetic textile production represent merely measures to overhaul the advantage of other countries: a fact which the international development of synthetic raw materials illustrates.

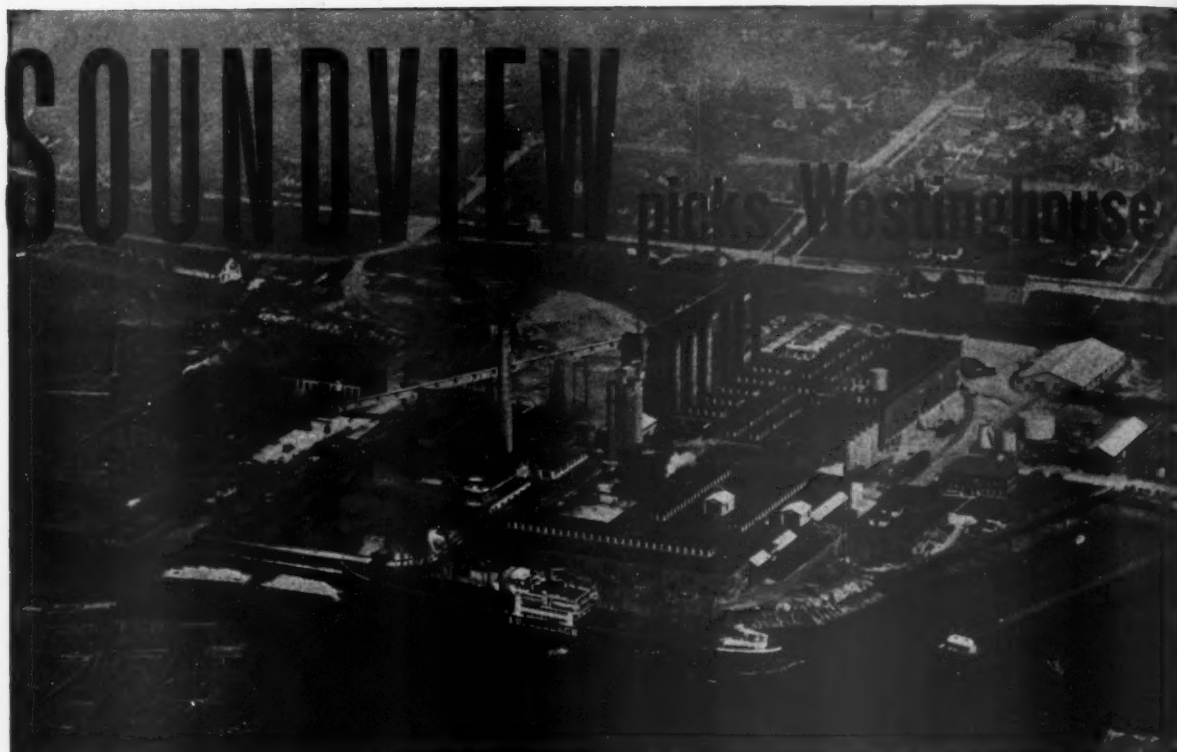
Staple Fibre in the Production Structure of the German Textile Industry

The import of spinning-materials in 1936 was reduced from 750 mill. kg to 655 mill kg, or 13%, as compared with the previous year, although the production index of the textile branches, which in 1935 stood at 94.1 at the peak of employment (October) and 82.3 at the lowest point (June), moved in 1936 between 92.1 (June) and 103.1 (November). Although the increasing consumption of home agricultural raw textiles contributed to this result, the shift over to synthetic spinning-materials, hand in hand with the increased use of old materials, was decisive.

"The frantic demand for staple fiber decided the competent supervisory authority at the beginning of September, 1936, to introduce planned control. As it was not possible to go back to the normal working contingents to assess the quotas for this new working material, all purchases and sales of staple fiber were simply made subject to permit.

"The factories were assured a certain basic quota according to the composition of their production, especially the combination ratio of staple fiber and natural raw textiles, taking into account the previous amounts of staple fiber worked up and the supplies held. In a case of urgent need, the supervisory office was ready to allot supplementary quotas. The choice of the origin of supply was left to the finisher, in order to promote competition in quality among the various producers.

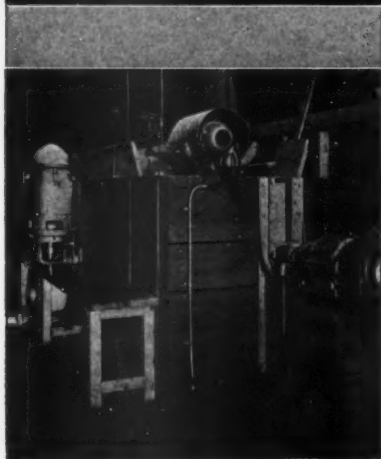
The Price-checking Ordinance had at first fixed the prices of November 30th, 1936, as the high limit, and these were to be exceeded only with special permission. Thus the price regulations of the Fibrin Ordinance, which allowed un-



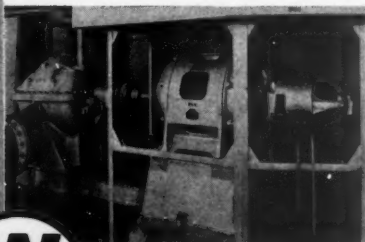
Another *NEW MILL...* WESTINGHOUSE-EQUIPPED!

Electrification of the Soundview Pulp Company's new mill at Everett, Washington was a job calling for the very finest in modern equipment. The search by its owners for the latest improvements in paper mill drive led to Westinghouse, as is so often the case. Today, enthusiastic operating reports are confirming the wisdom of this choice. For new mills or modernization jobs, Westinghouse equipment and engi-

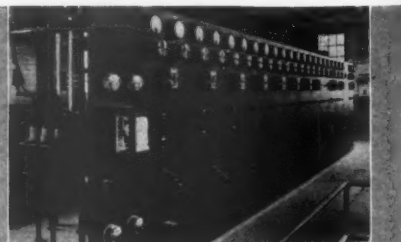
neering experience meet every test. It is an especial source of pride that so many mills, equipped in years past, are now turning to Westinghouse again for modernization. It will pay you to investigate the undivided responsibility which Westinghouse brings to the paper industry's problems. There is no obligation. Simply call your nearest Westinghouse office. J 93264 Westinghouse Elec., E. Pittsburgh, Pa.



Westinghouse Gearmotors drive the cylinder and couch rolls on 48" x 144" deckers. At the left are two 30-hp. vertical type SC motors, which drive Bingham pumps serving the deckers.



This 125-hp., 720-rpm. Westinghouse synchronous motor drives a Bingham pump in white water service.



All of the power required by the mill is handled by this Westinghouse distribution switchboard.

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avoidable increases in costs to be expressed in prices, were cancelled. The General Decree of the Price Commission for price-formation, published on March 12, 1937, again coupled the price calculation of the textile industry with the principle of costs. The textile factories now have the right to exceed the prices of November 30th in connection with rises in price of their raw materials and auxiliary materials and increase in their finishing wastages.

"The condition is that the increased costs were unavoidable, and only certain cost-factors are taken into account, so that, for instance, increased cost of coal, electricity or fuel, higher freight, insurance and packing costs, the presence of a special risk or the payment of workers above tariff rates are not grounds for a price-adaptation. Of greater importance, however, is the fact that not only the absolute rise of raw material prices, but the shift in proportions of the various raw materials, may be a valid ground for a rise in price. This allowance includes changes in the quality of raw materials worked up (increasing proportion of dearer raw materials) as well as transitions to new working materials. The latter shift of particular sets the price-controlling authority an extremely hard task.

"A textile ware made of staple fiber is not to be compared with one made of natural raw textile. Staple fiber is a completely new kind of working material which has attained a degree of versatility which practically fulfills every demand of the textile industry. As regards regularity of fiber-strength and fiber-length, staple fiber surpasses every natural product, firmness in both wet and dry state has increased greatly in recent years, and the dye-properties have been further developed.

The present-day staple fiber processes

permit of a shift over from one fiber-length to another within the shortest possible space of time, whereas the cotton cultivator needs decades to achieve an increase in the fiber-length of a special type by 1 or 2 mm. The graduation of the fiber-units enables the industry to manufacture staple fiber products which are as fine as natural silk or as thick as the coarsest wool. Bright, half-dull or dull fibers may be spun, according to demand, with smooth or rough surface; the fibers can also be spun straightaway to original-coloured variegated yarns.

New finishing processes have assured the crease-proof quality of staple fiber goods, and maintained or strongly reduced their water absorption. This all goes to show how greatly the power of variation of the staple fiber processes have enriched especially the textile branches concerned with fashions.

"The manufacture of staple fiber is based predominantly on the Viscous-process, the primary material of which is cellulose, and hence, finally, wood. Besides this, the Copper-ammoniac-process, which begins with cotton waste, plays a certain part. The price of copper-staple fiber, Cuprama, which is highly valued in the wool industry, at present exceeds the Viscous-staple fiber price by 60-70 per cent.

"The basis of the German staple fiber industry has up to now been foreign wood, but efforts are now being made to replace the foreign material with German wood.

"In the price policy, efforts are directed at procuring certain standard qualities, in order to combat the dissipation of production which means increased costs. In the preliminary stages of the Four Year Plan, the German staple fiber industry shows an economic and technical power of production which justifies great hopes."

New Rayon Plant for Argentina

The new rayon plant at Berazategui near Buenos Aires was formally opened on June 15. The plant represents an investment of 34,000,000 pesos, it is reported. (The free market exchange rate of the Argentina peso in June was 3.30 pesos to the dollar, this average representing actual selling rates for sight drafts on New York.) The new establishment, which has been producing on an experimental basis for some time, uses the viscose process. Another local rayon yarn plant (Rhodiaseta, Argentina S. A.) has been in production for more than a year and the combined output of both enterprises is expected to supply future Argentine requirements of rayon yarn. (Assistant Trade Commissioner Joe D. Walstrom, Buenos Aires.)

New Finnish Rayon Plant

The Kuitu O. Y. new rayon factory to be built near Enso is planned to produce at first 1,000 kgs of rayon silk, 1,500 kgs of staple fiber, and 1,000 kgs of cellophane a day. Most of this will be consumed in the home market.

Japanese Rayon Yarn Production

Production of rayon yarn for the first 5 months of 1937 approximated 132,000,000 pounds and the output for June has been estimated at 28,000,000 pounds, which would bring half year's output up to 160,000,000 pounds. It is now reported that Japanese rayon mills plan to increase their productive capacity by about 50 per cent in the next few months.

The Chemical Industrial Review of June 20 published a survey showing production increases planned by the various rayon yarn companies from May through September. The aggregate increase contemplated was placed at 228 metric tons (almost 503,000 pounds) per day and the capacity after expansion for the industry as a whole at 673 metric tons (almost 1,484,000 pounds) daily. On the basis of a working year of 320 days, the projected capacity would be equivalent to about 475,000,000 pounds per annum, which compares with actual production in 1936 of 275,000,000 pounds. During the first half of 1937, the industry worked under restrictions on production equivalent to 32 to 35 per cent of capacity.

New Varieties Of Staple Fiber

The Rayon Textile Monthly reports a series of new staple fibers produced in Europe.

Vistra X T fiber is a new staple fiber produced by I. G. Farbenindustrie of Germany and was created for the use of the wool industry. This viscose-staple fiber possesses a higher dry strength than wool and an equal wet strength. It has a mobile surface structure corresponding to the fine scales of the natural fiber. The cross-section is round to oval and intense, fine wool-like crimping and surface structure.

A new water repellent staple fiber is the Hydrophobic Vistra Staple Fiber. In addition to excellent spinning qualities, it has the valuable property of being just as water repellent as wool. It is made by the viscose process and the water repellency is created by chemical transformation, in other words, not just waterproofed. The repellency is quite fast to the fulling process and the dye affinity is not altered, it being dyed like other viscose fibers. The new fiber is said to be suitable for the carded wool industry making military uniform materials. This is also produced by I. G. Farbenindustrie.

Another important rayon staple fiber

made by the same firm is a "Cuprama S. K. Staple Fiber," made by the cuprammonium process. It is a curled type of fiber and has the same color as high grade wools. The curling gives excellent spinning qualities.

Still another new I. G. staple fiber is the "Lanusa." It has a wool-like crimping, luster, good adhesion qualities, excellent wet strength and elongation.

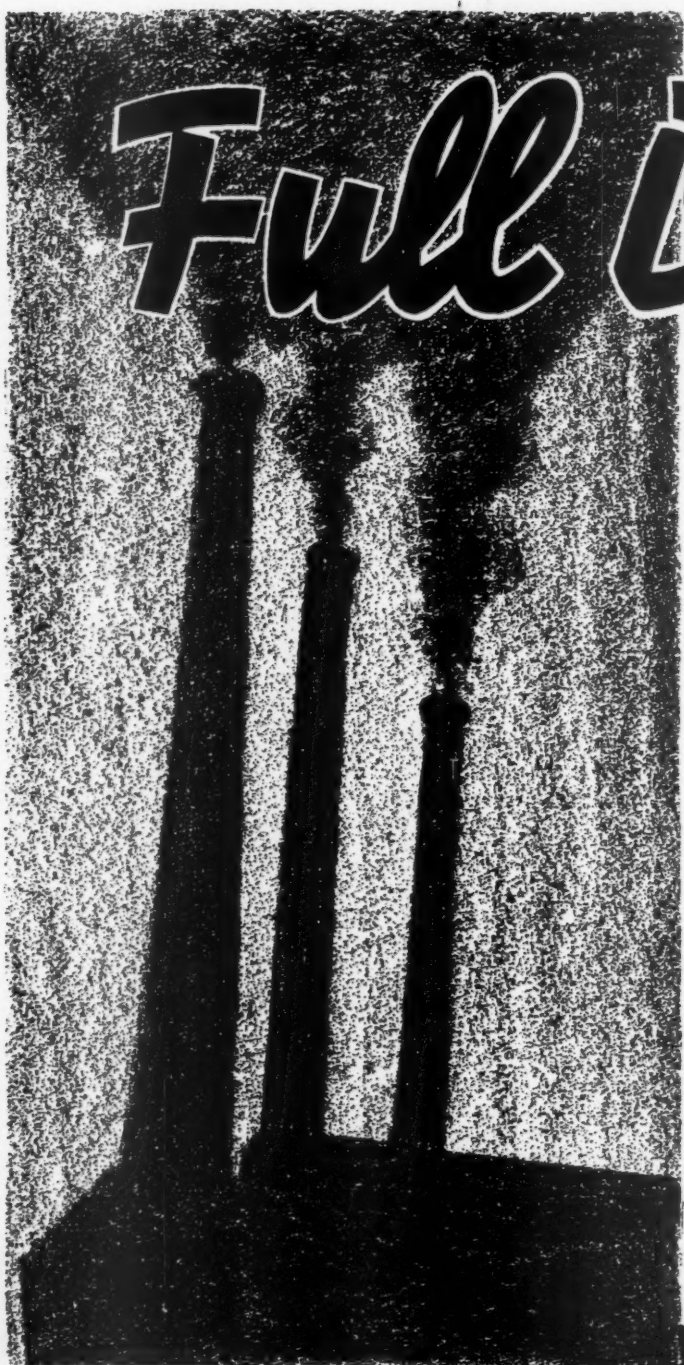
The above new staple fibers were exhibited at the last Leipzig Trade Fair.

Swedish Staple Fiber Plant to Expand

The capacity of Akth. Nordisk Silkecellulose, Norrköping, the only producer of so-called artificial wool in Sweden, is being increased from about 1,000 kilograms (kilogram-2.2046 pounds) to 2,500 kilograms per day. The entire output of the plant for 1937, including the new capacity, has been sold. This factory is owned by the Kooperativa Förbundet (The Cooperative Union), Stockholm, but is operated by Akth. Nordisk Silkecellulosa, which sells to privately owned and operated textile manufacturing plants. The company uses Swedish spruce as raw material. (Trade Commissioner Basil D. Dahl, Stockholm.)

Swedish Mill To Resume Operations

The stock of shares of the Ulriksfors Sulfit A.-B. has recently been sold to Stockholm interests, represented by Mr. A. Carlander, managing director of the A.-B. Malardalens Tegelbruk. The new owners have already started a remodeling and modernization of the Ulriksfors sulphite mill in Jamtland, which has been standing still since the Autumn of 1933, in order to reopen the plant later on. The Ulriksfors mill was built in 1916-17 for a capacity of 12,000 tons unbleached sulphite, later increased to some 14,000 tons a year.



Full Blast

From countless smokestacks rolls the tell-tale surge of black smoke. The paper industry now moves at top speed.

Black-Clawson and Shartle also are operating at full blast. Because this organization has been "first in research... first in development" they now are experiencing an unprecedented demand for their many products... among them the vertical dryer, the B-C vat, Barnacle Bill, Tugboat Annie, Mr. Rotobeater and the Miami jordan.

**BLACK-CLAWSON
and
SHARTLE BROS.**

Research Developments In Sulfite Waste Liquor Disposal

by Dr. H. K. BENSON*

THE GREATEST economic waste in the world today is lignin. Since man for the first time took shelter from the elements underneath a tree, the protective uses of wood have been amplified into the great wood manufacturing industries of this age. In the saw-milling industry about one-third of the forest tree is utilized as main product; in the pulp industry about one-half. Hence any appraisal of these industries always stops short at the stupendous wastage of one of our greatest natural resources. Frequently centuries of air, water, soil and sunshine have been required to produce the tree which by our modern wasteful methods is so largely destroyed by fire or washed into streams and waterways. In the pulp industry for every ton of pulp manufactured, there is roughly an equal amount of materials from the original wood to be found in the waste liquors. Since the sulfite pulp of the United States and Canada exceeds two million tons annually, the magnitude of the economic loss of an equal quantity of wood in solution is obvious. Furthermore, the dumping of this material into streams has in the past in certain localities caused objectionable pollution of the water. For these two reasons, it has seemed desirable that the methods of scientific research should be applied to this industrial waste material.

In this paper an effort will be made to review some of the work that has been done in the State of Washington in attempts to gain more complete knowledge of the nature of the materials contained in the liquid waste of sulfite mills. With a better understanding of the composition and the properties of these solutions, it should be possible to greatly diminish their polluting effects through the application of sanitary procedures or to eliminate them entirely by the removal of the soluble materials through their use in industry.

Divided Study

The study of sulfite waste liquor for the purposes of this paper might be divided into two main portions: (1) what happens to the water soluble materials when such wastes are discharged into water bodies; and (2) what industrial uses can be suggested for these materials from recent studies made of them.

The first study was confined to an investigation covering a three year period of a land locked bay of Puget Sound into which the sulfite waste of a pulp mill was discharged. It was necessary to design methods for the detection

of the waste matter in sea water and its quantitative determination. This was done by selecting first a reference station in the locality that was unpolluted but subject to the same tidal and seasonal influences as the polluted area. For this purpose the biochemical oxygen demand values commonly employed in sewage work served as useful criteria for measures of the organic content of the water. The results were expressed in terms of the residual oxygen content or oxygen balance that remained after the sample had been incubated for a 20-day period. By using a stabilized sea water which had no oxygen demand at all and adding to it measured quantities of digester liquor it was possible to set up a chart or scale that accurately set forth the oxygen demand of various dilutions of sulfite waste liquor in distilled water or in stabilized sea water. It was found that when this procedure was confined to the digester liquor of a given mill the results were very consistent, and even when applied to different mills was fairly so.

When the oxygen demand of the polluted sea water was next determined, this value was the result of oxidizable organic matter naturally present plus that which was added from the sulfite mill. But the variations due to tidal and seasonal influences were accurately reflected in the values obtained in the water from the reference station. Hence the differences in oxygen demand at the various stations must be due to the polluting substances added by the pulp mill, and it was possible to express the extent of this pollution by reference to the charted oxygen demand of the digester liquor dilutions in distilled water or in stabilized sea water. It was found that one part of sulfite waste liquor in 30,000 parts of stabilized sea water was detectable in these oxygen values. By means of these values it was possible then to picture the composition of the water at all of the stations and to depict the spread of the liquor throughout the bay after its release. When this liquor was released into a narrow channel on the outgoing tide which carried floats with flags of various colors to indicate the stage of the discharge it was possible to follow these floats with sampling boats and thus ascertain the rate and extent of the spread of the liquor. Subsequently the permanganate consumed method was modified by combining the Zimmerman Reinhardt reaction for the presence of chlorides in the titration of permanganate and the oxygen consumed by the organic matter was determined. It was found that when these values were charted with appropriate units, the two oxygen graphs closely paralleled each other. The chemical oxygen demand method was of course much quicker than the biochemical oxygen demand and was especially suited

for field work. An objection to it was later noted in that certain types of organic matter that are resistant to oxidation by permanganate are nevertheless oxidized by the aid of organisms.

Inasmuch as it was found that the oxygen values of the various stations in the bay that received the sulfite waste did not materially increase after several years of mill operation it was concluded that the usual cycles of water purification were active and since there was no accumulation of organic matter in the bay that the sulfite waste matter is evidently broken down by action of microorganisms naturally present in the sea water. It is obvious that in this purifying action, re-aeration of the tidal waters plays an important role in the maintenance of aerobic processes.

Since the alkaline sea water neutralizes the acidity of the sulfite waste liquor, under certain conditions, precipitation of the organic solids might take place. When this organic matter becomes a part of the sea bottom mud anaerobic conditions occur. It is, therefore, of some interest to determine what products are formed in the decomposition of sulfite waste liquor under anaerobic conditions. This subject became the doctorate thesis of A. M. Partansky with the supporting interest of Dr. B. S. Henry and the author of this paper. A series of articles describing this work has been published.

Liquor Analysis

For the purposes of this discussion perhaps the most interesting phase is that of the analysis of sulfite waste liquor. In the work on the fermentation of the liquor by anaerobic bacteria, it was necessary to make a complete and detailed analysis of the liquor at various stages in order to follow quantitatively the changes produced. A search of the literature showed that although analytical methods as such are available for the determination of the substances present yet their separate determination in the liquor in most cases required modification of the existing procedures. It became necessary, therefore, not only to survey the methods found in the literature and the opinions of other writers upon these methods but to actually try them out and finally to work up a concise and systematic method of analysis.

The composition in grams per liter of two samples of sulfite waste liquor is given below.

	Sample 1	Sample 2
Total solids	109.5	138.7
Residue on ignition		
(as sulfates)	15.72	26.73
Total volatile acids	5.46	6.41
Formic acid	0.84	1.19
Acetic acid	4.62	5.22
Calcium (CaO)	6.71	9.47
Total sulfur (S)	10.98	11.68

*Executive Officer, Department of Chemistry and Chemical Engineering, University of Washington, Seattle. Presented at the meeting of the Canadian Chemical Society in Vancouver, B. C., June, 1937.

The HARMON DIAPHRAGM SCREENS meet the demand for clean pulp and high capacity . . .

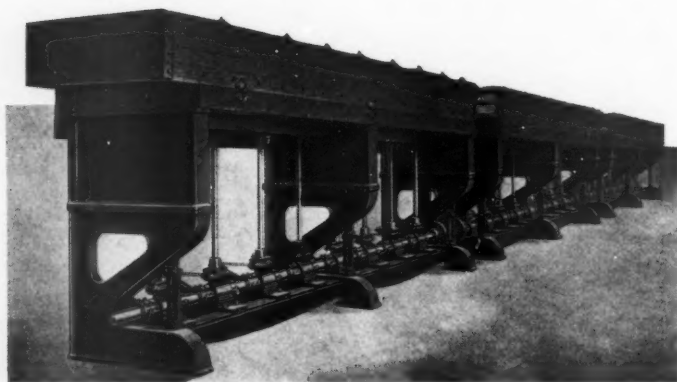
★ THE modern flat or inclined screen is a material improvement as to construction and operation. The introduction of jig finished parts, allowing perfect interchangeability, is but one of the features which makes the HARMON Diaphragm Screen a superior unit.

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The
BAGLEY & SEWALL
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WATERTOWN, NEW YORK

Sulfate (SO ₄)	1.30	2.35
Free SO ₂	5.42	1.45
Loosely combined SO ₂	6.10	5.83
Sulfone sulfur (SO ₂)	9.47	14.18
Pernanganate Oxygen	102.2	125.0
Methyl alcohol	1.12	0.72
Ethyl alcohol	0.16	0.23
Acetone	0.15	0.10
Furfural	0.228	0.24
Lignin	56.4	69.6
Total sugars	20.64	20.47
Pentoses	2.74	3.37
Hexoses	17.4	17.1

Fermentation Studies

For the laboratory study of anaerobic fermentation two series of experiments were conducted each extending over a period of 300 days or more. The object of the first series was to study the influence of temperature and dilution of sulfite waste liquor by sea water on the rate and extent of its decomposition and stabilization under strictly anaerobic conditions by the bacteria of sea water mud and to determine the nature of the residual products produced during the fermentation. In the second series of experiments mud from fresh water bodies, brackish sloughs, and garden soil was used, and in this case, the sulfite waste liquor was neutralized with calcium carbonate at boiling temperature. This treatment precipitates not only the free SO₂ but also that loosely combined with the sugars but does not otherwise affect the organic matter. The neutralized solution had a pH of 6.7, total solids of 114.2, a permanganate consumed of 105 grams O₂ per liter and its reducing value was equivalent to 21.7 mgs. of glucose per cc.

Gallon glass jars were fitted with gas delivery outlets and also with tubes for removal of liquids. They were incubated at the following temperatures: 9°C. the average temperature of Puget Sound Waters; 21°C., the temperature commonly reached by the waters retained on the beaches at low tide during the hot period of the year; and 36°C., maximum summer temperature of sea mud exposed at low tide. Four concentrations and a blank were used in the experiments, the sulfite liquor ranging from 1.5% to 26.4% of the total liquids.

The results of these experiments indicate that by the use of sewage methods utilizing anaerobic reactions it is possible to destroy by gasification all the sugars together with the minor constituents of sulfite waste liquor. In the case of sea water muds, these gases consist of carbon dioxide, methane and hydrogen sulfide; with the fresh water muds they consist of carbon dioxide, methane and some hydrogen. The heating value of the gases per ton of pulp is equivalent to over 3,000,000 B. t. u. The rate of gasification is, however, too slow for commercial use since it involves a 2 to 3 months period. In an attempt to speed up the process both mixed cultures and pure cultures were used. One of the latter, *Clostridium polyfermenticum*, can be made under proper conditions of temperature, liquor dilution and nitrogenous matter content to convert the sugars into butyric and acetic acids in the course of two days. If a large demand for butyric acid arose, this source might be developed commercially.

Whether the methane type or the butyric acid type of fermentation is employed, there remains as a residue of organic matter only the lignin. With the exception that it has lost part of its methoxyl, the lignin in the form of lignin sulfonic acids is not attacked in anaerobic fermentation. All its properties such as precipitation by betanaphthylamine hydrochloride, by 20 per cent sulfuric acid, by ethyl and methyl alcohols and its reducing properties remained unaltered. The resultant product of anaerobic fermentation is therefore a stable material of a faint odor and after aeration did not cause any change in the oxygen consumed.

Three rather interesting possibilities in connection with the disposal of sulfite waste liquor arise: (1) when lignin is first removed from sulfite waste liquor, the methods of disposal are greatly simplified and similar to those used in the disposal of sugar wastes; (2) when septic tank or contact bed sewage methods are used the sugars can be completely gasified and the resultant lignin containing solution is stabilized and its pollution effect greatly reduced; and (3) whether lignin is present or not, with selected organisms and in concentrations such as obtain after the washing of the pulp, the sugars may be quantitatively converted into butyric and acetic acids in a two day period.

Potential Industrial Uses of Waste Liquor

We turn now to some of the recent attempts to utilize certain properties of sulfite waste liquor for industrial commodities. Its use in the stabilizing of the soil that constitutes our secondary roads holds a great deal of promise and warrants a greater expenditure of research than has been given to it up to the present.

Road Binders

The strength and resistance to abrasion of all earthen roads are provided by an adequate supply of road binder, consisting of silt and clay in the proper proportions. Unfortunately, this soil binder is easily removed: in winter by washing effect of rains and snow; in summer by dust under heavy traffic loads. Hence frequent artificial restoration of the soil binder becomes necessary. Because of its expense various methods of treatment have been resorted to in order to retain the necessary road binder. Salt, calcium chloride and sulfite waste liquor are perhaps the most common road stabilizers. In order that clay may have maximum binding power the moisture content of the road soil must not fall below a certain amount. Salt maintains this moisture content by forming a crust at the surface and retarding evaporation. Calcium chloride maintains the required moisture content by its deliquescent action. Oil acts as a binder in lieu of the moisture. Hence the function of sulfite waste liquor should be to retard evaporation and to act as a binder. These properties have been studied in a number of thesis investigations in the chemical engineering laboratories of the University of Washington.

Some of the results obtained in these studies will be described. The work of Marion H. Norton dealt with the effect of sulfite waste liquor on soil by itself, when treated with lime and when treated with calcium chloride. He made up a graded soil mixture having a plastic index commonly encountered in road soil and treated it with various samples of waste liquor. Since the plastic index is a measure of the strength of the soil and its utility for road surfacing it was thought that by forming the treated soil into two inch cubes and crushing them in a testing machine results could be obtained that would be comparable to actual road tests. Unfortunately the

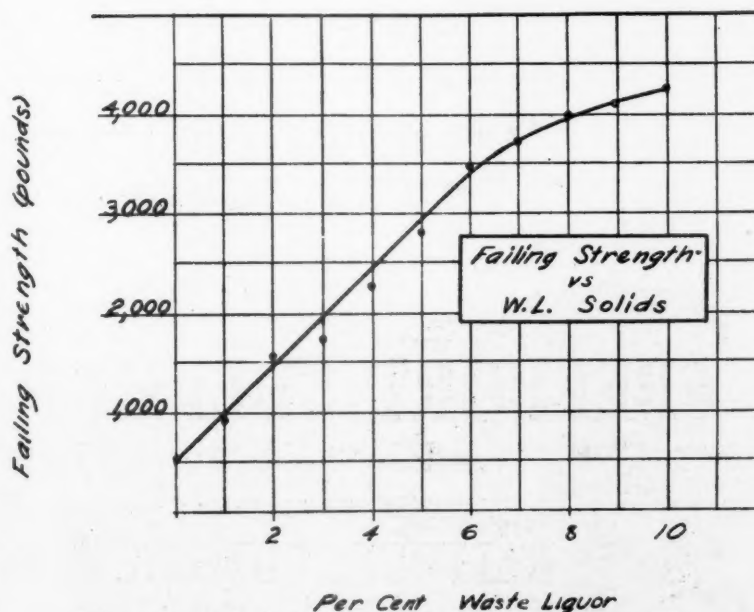
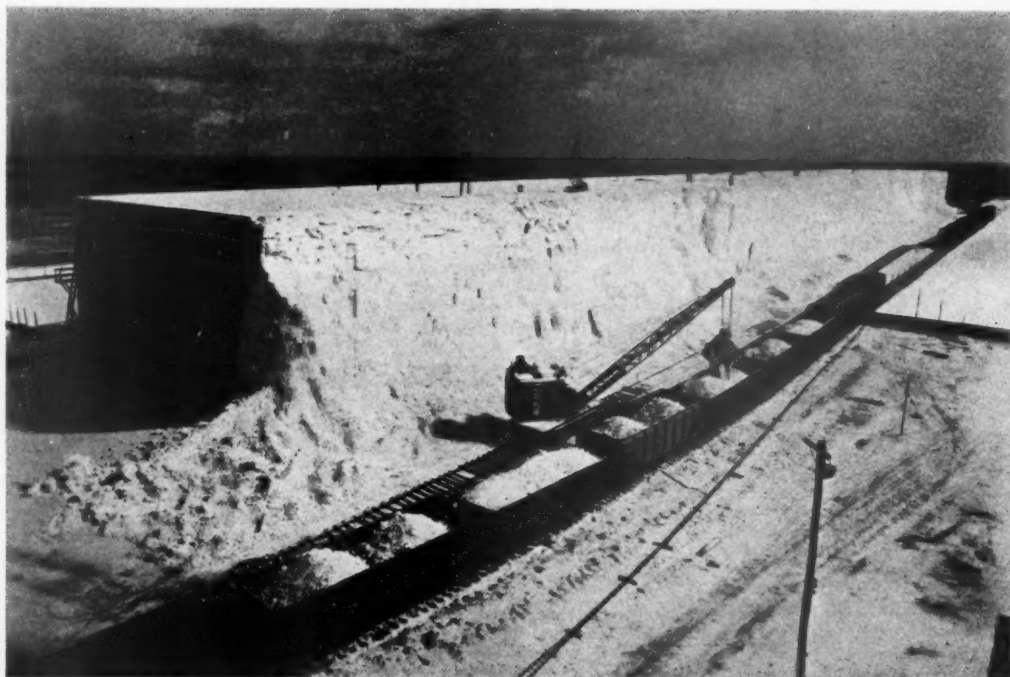


Plate I

FREEPORT SULPHUR



Loading Sulphur — Hoskins Mound — Freeport, Texas

We extend our heartiest congratulations
and best wishes to Soundview Pulp
Company on the completion of
its new production units.

●

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waste liquors migrated to the edge of the cubes during drying forming a shell of tough plastic material around a soil center. Although his results were only relative they showed some proportionality between the lime added and the binding strength of the waste liquor. Furthermore Norton's work showed the necessity of better testing methods to obtain check results and of a method for the pretreatment of waste liquor so that its organic content might be flocculated or precipitated within the soil mixture, thus preventing the migration of the solids to the surface and acting as a true binder of the soil particles.

In a continuation of this work, R. D. Mennell sought to control the optimum lime treatment of waste liquor by the pH of the resulting solution rather than the ratio of lime to waste liquor solids as used in Norton's work. In order to obtain check results of the crushing strength of the cubes, Mennell placed the mix in two inch molds, covered with wax paper and allowed them to come to equilibrium for 24 hours. Next the wax paper was removed and the cubes allowed to dry in the molds from two opposite faces for 24 hours at a temperature of 50°C. The cubes were then removed from the molds and allowed to dry from six faces for 5 days in a slow stream of warm air at 50°C. The faces exposed to the jaws of the testing machine were capped with plaster of paris to give two perfectly flat and parallel surfaces. Excellent check results were obtained by this procedure.

The first series of experiments dealt with the effect of increasing concentrations of untreated waste liquor in the soil. Commercially evaporated waste liquor containing 44.4 per cent total solids was used. The pH's reported were obtained from a Wulff pH tester. The results are given in Table I and portrayed graphically in Plate I.

When lime is added to waste liquor two effects are produced: First the lime reacts with $\text{Ca}(\text{HSO}_3)_2$ to give CaSO_3 which separates out as a fine insoluble gray precipitate; second, further addition of lime precipitates the organic material. The pH at which the organic material in the waste liquor begins to come down to an appreciable extent is known as the lime-end-point. More exactly the lime-end-point is defined as the pH to which the liquor must be brought in order to have maximum precipitation when NH_4OH is added in excess to the filtrate from the calcium sulfite precipitate. This pH varies slightly with different waste liquors from 8.1 to 9.5, being apparently a function of the wood used and the conditions under which it is cooked.

The lime-end-point of the waste liquor used in these experiments was determined as follows: one hundred cc. samples of liquor were treated with finely divided lime to pH's varying from 3.5 to 11.5. The precipitate of calcium sulfite was filtered off and to a 50 cc. portion of the filtrate was added 50 cc. of 15 N ammonium hydroxide. These samples were allowed to stand for 24 hours after which the organic precipitate was filtered off, dried and weighed. The results are given in the following table (Plate II):

Table I
FAILING STRENGTH vs. LIQUOR SOLIDS

Per cent Waste Liquor	pH Waste Liquor	Average Failing Strength—Pounds
0	—	535
1	3.9	905
2	3.7	1560
3	3.6	1755
4	3.5	2300
5	3.5	2825
6	3.4	3475
7	3.4	3725
10	3.2	4250

Table III

Per cent Waste Liquor	pH Waste Liquor	Average Failing Strength—Pounds
4.5	3.5	2,500
4.5	5.7	3,050
4.5	8.1	3,400
4.5	8.7	2,775
4.5	9.2	2,362
4.5	11.5	1,850

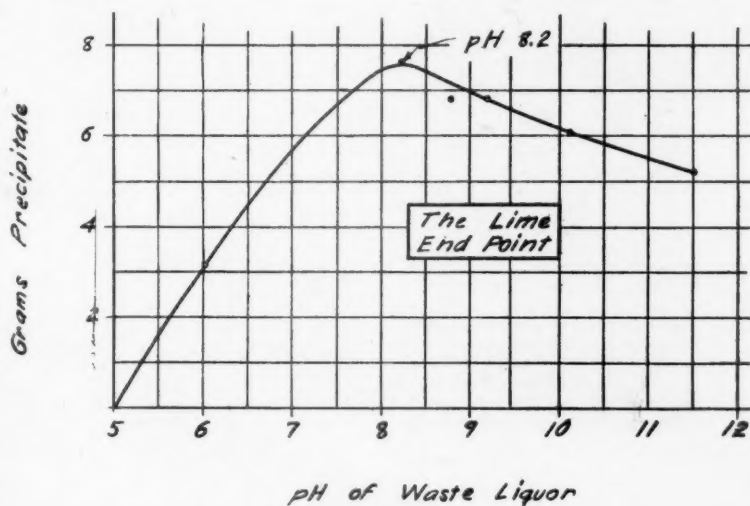


Table II

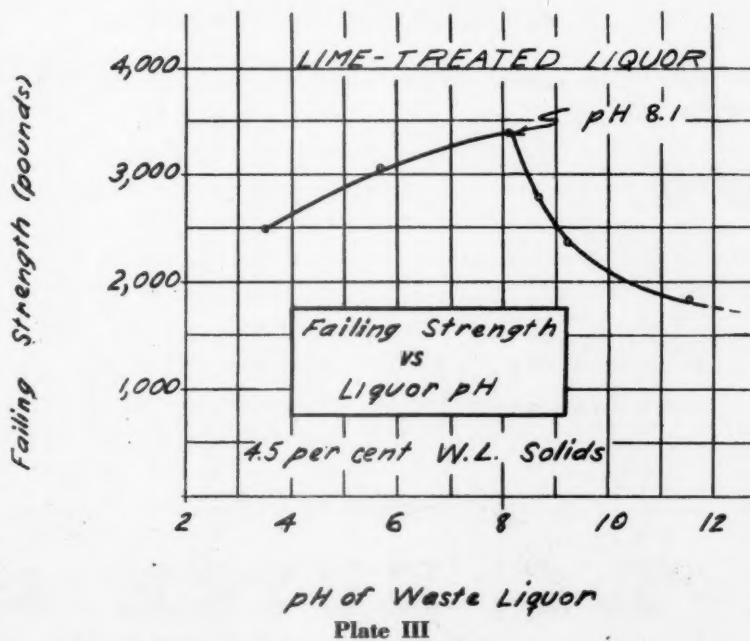


Plate III

RIGHT { in Length } in Width

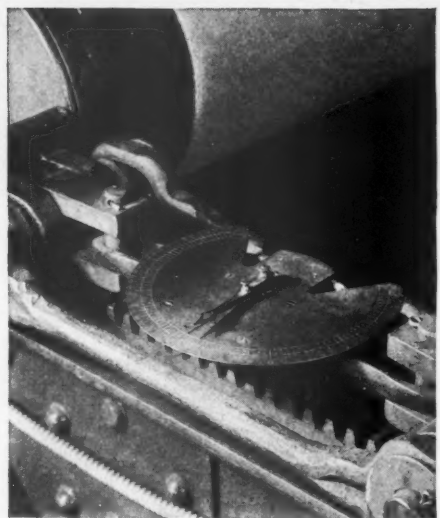


Kenwood felts are regularly produced in lengths up to 230 feet and in widths up to 300 inches. Each individual felt is dried to exact specifications. An electrically operated carriage, designed by Kenwood, runs the felt out to the desired length, maintaining at the same time a controlled even tension across the entire width. No guesswork here. When a Kenwood felt starts on its way to work, it is right in length, right in width for its job on the paper machine.

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A dynamometer, perfected by Kenwood, indicates the tension on the felt during the entire drying process. The dynamometer reading, which is entered on the work-ticket of each individual felt, is a good barometer of the felt's stretch-resisting qualities. A permanent record of this reading is kept for reference.

F. C. HUYCK & SONS

ALBANY, N. Y.

Table II

pH	Weight of Precipitate
Waste Liquor	
5.0	—
6.0	3.2
8.2	7.6
8.8	6.8
9.2	6.8
10.1	6.1
11.5	5.2

Soil samples were treated with waste liquor made up to varying pH's. The results are given in the following table and graphically portrayed on Plate III.

The conclusion has been reached therefore that the maximum strength of waste liquor occurs at the lime-end-point which is a perfectly definite pH for a given liquor and that the binding power of lime treated liquor is a function of pH rather than of the lime-total solids ratio.

Successful Use on Roads

It is of interest to know that in the State of Washington waste liquor has been commercially used for road soil stabilization. In the eastern part of the state, the entire output of waste liquor is applied in unaltered form for maintaining dirt roads in that section. Over 2,000 miles of highways and streets are treated with it in the vicinity of Spokane. It is considered superior to oil for this purpose. Applied after rain it follows the moisture down into the soil then as the road dries, a hard dust-free and smooth crust or surface forms. Two or three applications are made in each season.

In Western Washington, the Rainier Pulp and Paper Company has operated for some time a plant with a capacity of 1000 barrels per day for the evaporation by waste heat of its waste liquor. This product contains from 44 to 48 per cent solids. It is known as "Raylik B" and shipments have been made to New Jersey and other states for the treatment of dirt roads.

It is not within the province of this paper to discuss the recent research developments that already have been described in the literature dealing with this subject. The work of Howard and his associates in Wisconsin has resulted in the commercial operation of a plant to separate the calcium sulfite and reuse it in the acid making towers and to utilize the organic materials for fuel or lignin derivatives. The ammoniation of waste liquor by Max Phillips and his associates of the U. S. Bureau of Chemistry and Soils calls attention to its possible use as a fertilizer material and the increasing interest in the substitution of ammonia in place of calcium in the cooking liquors of the sulfite process points to interesting developments in the field.

Finally when the field of lignin chemistry is more fully explored and becomes better known it is reasonable to believe that the disposal of sulfite waste liquor will no longer be a problem but rather a lucrative practice in this industry.

Market for Pulp in Brazil

None of the Brazilian mills possess equipment for bleaching pulp and consequently this article has to be imported from abroad. Contract prices on unbleached sulphite pulp for delivery during 1938 are reported to range from £16 to £16 10s per metric ton; bleached sulphite pulp for delivery during the same period is quoted at £23 per metric ton. Scandinavian suppliers are currently selling pulp on this market on terms which range from cash to 120 days date, depending upon the credit standing of the customer. Mills usually contract for their pulp requirements during May and June for delivery during the ensuing year. Practically all of the pulp consumed in Brazil is imported, although a recent increase in pulp prices is leading a few of the local mills to utilize a small quantity of domestic pulp made from waste paper. It is estimated that of Brazil's annual consumption of wood pulp in 1935 which amounted to 84,460 metric tons, 85 per cent was unbleached sulphite pulp used principally in the production of wrapping paper. The remaining 15 per cent of bleached sulphite pulp was consumed by a few mills engaged in the production of writing and other high grade paper. (Commercial Attache Ralph H. Ackerman, Rio de Janeiro.)

Waxed Paper in Argentina

Approximately 90 per cent of Argentina's requirements in the way of waxed paper is reported to be supplied by local production. Prices on the domestic product range from 1.25 to 1.40 paper pesos per kilo (paper peso equals about 30 cents United States currency at present exchange rates). (Assistant Commercial Attache DuWayne G. Clark, Buenos Aires.)

Paper Manufacturing in Canton

Most of the paper manufactured in the Canton consular district and used for purposes other than writing is produced in small plants which employ native methods and materials. There is, however, a factory of moderate size operated under private Chinese management which manufactures Chinese writing paper from rags. Most of the writing and news print paper used here, however, is imported. In addition to the above plant, the Kwantung Provincial Paper Mill on Honam Island is nearly completed and commenced operations on July 1, 1937. This mill, which was built by the Provincial Government, is comparatively large, being equipped with modern machinery. It has a capacity of 50 long tons of news print paper per day, which will be the only kind of paper manufactured during the first year of operation. Machinery has been installed, however, for the production of book, drawing, and heavy weight papers. It is understood that this mill will utilize Chinese pine. (Consul Samuel J. Fletcher, Canton.)

Finnish Concern Makes Money

By the acquisition of a second big news print machine at Myllykoski and the substantial increase in the mechanical wood pulp output at the same mill the productive capacity of the Yhtyneet Paperitehtaat O. Y. (The United Paper Mills Ltd.) increased considerably during the early part of 1936. The sub-joined table shows the advance in the concern's production in recent years.

	1933	1934	1935	1936
Paper —	63,500	86,900	91,400	132,700
Cellulose	55,100	58,200	77,400	82,300
Mechanical pulp —	64,700	81,600	82,800	123,600
Last year the mills consequently in-				

creased the output to 358,500 productive units compared with 251,600 units in 1935. Out of this total output sales last year amounted to 200,000 units from 155,000 a year before.

Thanks to the increased production the concern was able to return considerably increased gross and net profits. The former totalled 66.5 mill. mks. as against 53.7 mill. mks. for 1935. Expenditures and interest have risen from 17.6 to 21.2 mill. mks. and the depreciation account from 20.5 to 24.5 mill. mks. The net profit for last year increased from 4.5 mill. mks. to 16.8 mill. mks., and the dividend was again raised from 9 to 10 per cent, absorbing 9.0 mill. mks., while the remaining undistributed profits, viz. 10.1 mill. mks., was left on the profit and loss account. The book-value of the industrial establishments has risen from 289.4 to 304.5 mills. mks., while that of the auxiliary departments and fixtures has increased from 21.0 to 26.4 mill. mks. Stocks in hand have grown in value by 15 mill. mks. to 100 mill. mks.

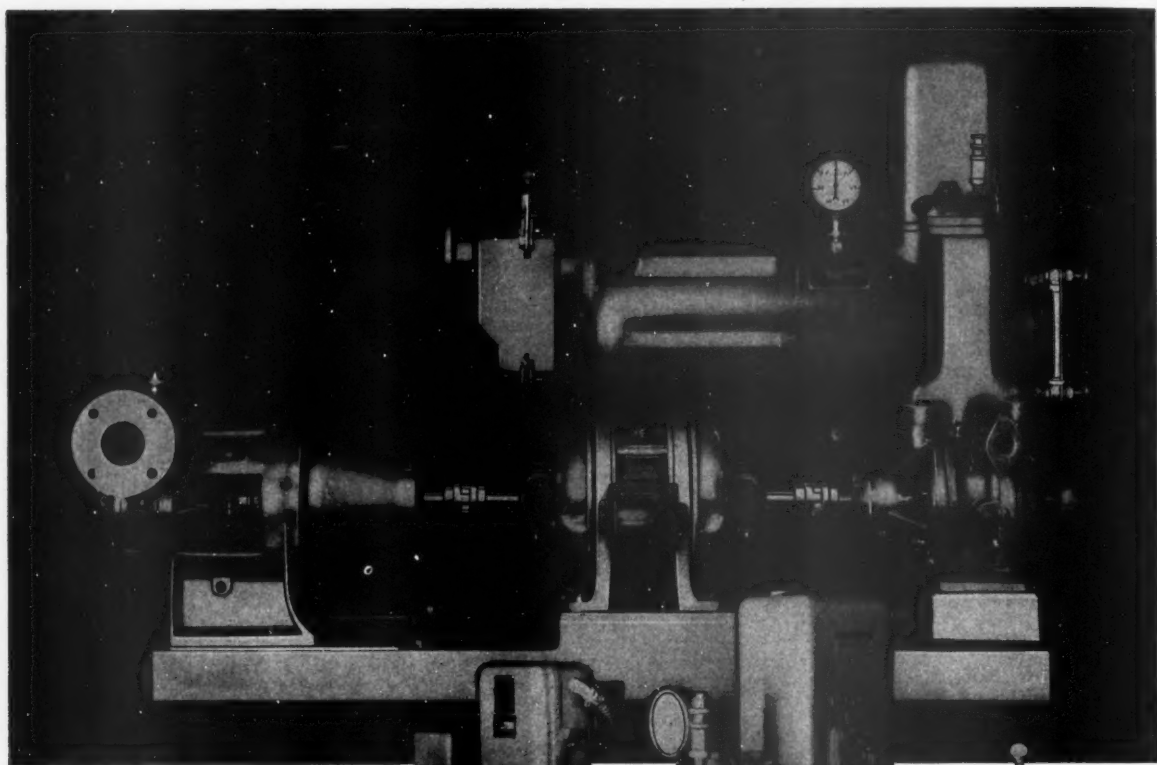
A third reserve fund has been set aside, increasing the share capital and funds to 124.5 mill. mks. and the renewal fund has increased by 17 mill. mks. to 152.5 mill. mks. The amount of borrowed capital has advanced by roughly 15 mill. mks. to about 19 mill. mks., representing 39 per cent of assets as was the case also the year before.

Production Ratio Declines

The American Paper & Pulp Association's monthly production ratio declined to 87.4 per cent in June from 90.6 per cent in May.

This is the first month of 1937 to show a ratio of production to capacity below 90 per cent, the high month to date being April with 92.1 per cent.

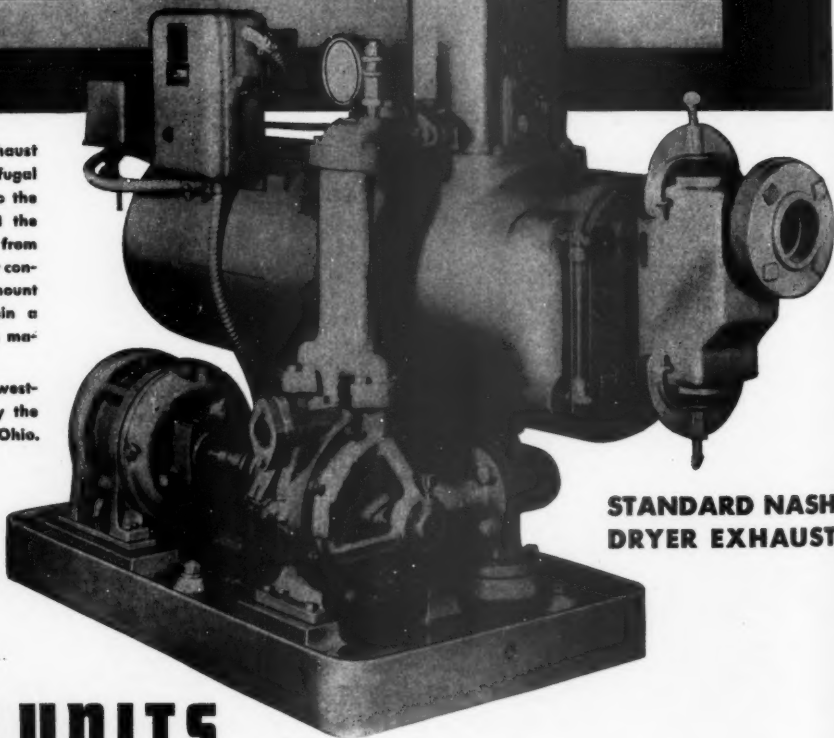
June of 1936 showed 80.7 per cent and June of 1935 was 72.3 per cent.



● Special Jennings Dryer Drainage Exhaust Pump, with separate Jennings Centrifugal Condensate Pump. The tank is piped to the condensing dryers at the wet end, and the condensate pump handles the drainage from the flash tanks. By separating the cooler condensate and hotter condensate, the amount of cooling water necessary to maintain a given vacuum on the wet end dryers is materially reduced.

This special pump was developed for Midwest-Fulton, and is distributed exclusively by the Midwest-Fulton Machinery Corp., Dayton, Ohio.

NASH DRYER EXHAUST UNITS



**STANDARD NASH
DRYER EXHAUST**

The standard Jennings Dryer Exhaust Unit delivers full rated capacity of both air and condensation simultaneously. Advanced mechanical design assures low horse power consumption. Initial performance is maintained over long periods owing to simple construction and absence of internal wearing parts.

Operating and maintenance costs are low.

**NASH ENGINEERING COMPANY, PULP AND PAPER DIVISION
GRAYBAR BUILDING
NEW YORK CITY, N. Y.**

Freeport Sulphur Increases Sales to Pulp Industry

In his report to the directors of the Freeport Sulphur Company, President Langbourne M. Williams, Jr., said that the company's increased earnings were due to the accelerated pace of American business generally and the increased use of sulphur in manufacturing processes and in agriculture.

Mr. Williams cited the pulp and paper industry especially, pointing out that Freeport's sales to this group had increased 37.7 per cent over the first six months of 1936. He also declared that the expansion in the rayon industry which is currently operating 149.7 per cent ahead of 1929 levels had created an unusual demand for sulphur as this mineral is used several times in the rayon manufacturing process.

The consolidated net income of the Freeport Sulphur Company for the six months ending June 30th was \$1,279,841, equal to \$1.56 per share on the 796,380 shares of common stock outstanding after provision for preferred dividends and all charges including depreciation, depletion and Federal taxes, but without provision for surtax on undistributed profits. This compares with earnings of \$1,014,872 or \$1.22 a share in the like period of 1936, and it is the highest for any similar period since 1931.

Of Freeport's earnings for the first half of the year, \$54,699, or 7 cents per common share, was contributed by the Cuban-American Manganese Corporation, which suffered a net loss for all of 1936 of \$243,583.

Directors of the Freeport Sulphur Company declared a dividend of 50 cents a share on the common stock, payable September 1st to stockholders of record August 13th. The company has previously paid 25 cents quarterly since the March quarter of 1935. A quarterly dividend of \$1.50 was also declared on the \$6 preferred, payable November 1st to stockholders of record October 15th.

The Swedish View of The Pulp Situation

The Swedish Wood Pulp Journal had the following to say about the wood pulp market on July 15th:

In our latest report it was pointed out that, should the usual summer calm now set in on the market, it would be well justified by the present sales position. The sales in the last two weeks have also been relatively small, amounting to perhaps 30,000 tons in all, a figure the magnitude of which should be considered in relation to the limited quantities of this and next years' production that still remain unsold.

The prices obtained these last weeks are still tending to be very firm and hardening, especially in respect of strong sulphite. For contracts covering the whole of 1938, or only its second half, the following prices per long ton c. i. f. British ports have been obtained: bleached sulphite £19 5s. to £20, easy bleaching sulphite £17 5s. to £18 2s. 6d., strong sulphite £15 15s. to £16 5s., and strong sulphate £11 15s. to £12 12s. 6d.

The sales of mechanical pulp have been rather inconsiderable these last weeks. There is still an impression that the market is short of wet pulp this year, as witness the fact that pulp is reported to have been sold from one of the Northern countries for shipment in the late summer at 80s. per wet ton c. i. f. British East Coast ports.

Dry mechanical pulp has been sold for shipment during the second half of the year at from 147:50 to 150 kr. per ton net f. o. b.

Japanese to Build Paper Mill In China

A new paper mill capitalized at 10,000,000 yen and financed by Japanese interests is in course of construction in the Tientsin district. The new plant will have a daily productive capacity of 30 tons of news print. (Commercial Attache Julean Arnold, Shanghai.)

Finns To Build New Kraft Mill

Jakobstads Cellulosa A.-B. has decided to raise its share capital from 20 to 45 million marks in order to facilitate co-operation between the company and various persons interested in starting a sulphate cellulose mill in Ostrobothnia. It is, however, considered that the time is not yet ripe for carrying out this plan. Jakobstads Cellulosa A.-B. intends therefore to erect a sulphate mill as soon as conditions are propitious for the realization of the project.

It has moreover been decided to start in conjunction with Jakobstads Cellulosa A.-B. a new company, Osterbottens Tra Aktiebolag for the purpose of taking charge of timber purchases for the cellulose mill as well as looking after shipments of mining timber which have hitherto been in the hands of a number of firms in these districts.

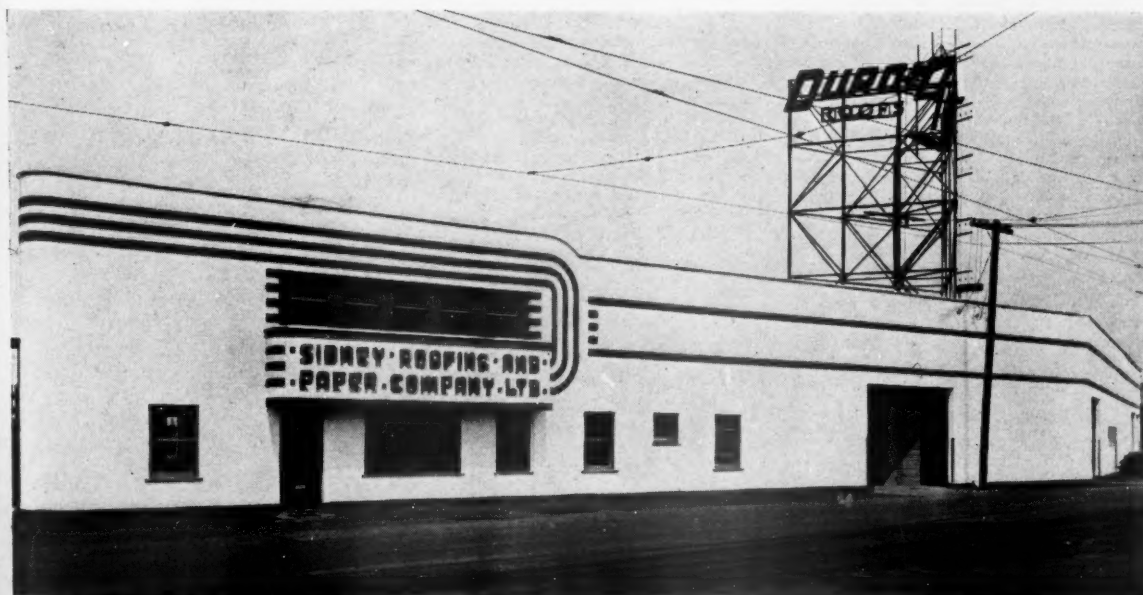
Jakobstads Cellulosa A.-B. owns a sulphite mill at Jakobstad, erected during the years 1934-1935 and which has an annual output of about forty thousand tons of strong sulphite cellulose.

Wendt Celebrates Birth of a Son

Louis A. Wendt, instrument man for the Pulp Division, Weyerhaeuser Timber Company, Everett, Washington, became the proud father of a six-pound two-ounce baby boy on June 16th. The young fellow was promptly named Robert Louis.

Pulpwood Imports Rise

Imports of pulpwood into the United States during the first three months of 1937 totaled 228,708 cords of a value of \$1,366,619, according to U. S. Commerce Department reports, contrasted with 151,207 cords of a declared value of \$919,712 in the corresponding time of 1936.



SIDNEY ROOFING & PAPER COMPANY'S new branch plant and warehouse in Vancouver, B. C., which was completed in June >>> The company's roofing and board mill is located in Victoria, B. C.

Trade — Talk



of Those Who Sell Paper in the Western States

Javits Honored In Los Angeles

Members of the Southern California paper trade gave a dinner in honor of Mr. J. K. Javits of New York, who is counsel for the National Paper Trade Association. The affair was held at the Jonathan Club in Los Angeles, July 20. Mr. Javits was visiting in Southern California on his vacation. He addressed the group on "Trade Problems and Government Relations." In his talk he stressed the legal viewpoints in connection with trade association activities. Fifty attended the dinner. Mr. Walter W. Huelat, manager of Blake, Moffit and Towne's Los Angeles branch, acted as toastmaster.

Continental Starts Los Angeles Plant

The Continental Bag Specialties Company, Pacific Coast Division, and its affiliate company, the Oneida Paper Products Company, began operations in their new plant at 2736 East Twelfth Street, Los Angeles, August 1st. The Continental Bag Specialties Company manufactures glassine bags, coffee bags, cellophane bags, cellophane window bags, waxed bags and similar specialties.

The new building, a leased property, provides 17,000 square feet for manufacturing and warehousing purposes. Sixty to 70 employees will be used in the plant. A rough estimate of the capacity when machinery is completely installed is 2,000,000 bags per day. The building was built specially for this plant so incorporates special features for its smooth running. All new machinery is installed manufactured by the company itself. The plant is located on a Union Pacific spur. Manager of the firm is Irwin A. Reiss.



New Los Angeles plant of Continental Bag Specialties Company and the Oneida Paper Products Company.

Beedle Heads Graphic Arts Institute

Mr. G. L. Beedle, for many years secretary of the Lithographers Association of Southern California with headquarters in Los Angeles, has accepted the appointment of executive secretary of the Graphic Arts Institute, an incorporated trade body with headquarters in San Francisco. Mr. Beedle will make his home in San Francisco.

Mr. H. S. Lund, for many years assistant to Mr. Beedle in Southern California, is taking the latter's place as local secretary of the Lithographers Association in Southern California.

Polkinghorne In New Quarters

The Polkinghorne Paper Co. moved the first of May to new quarters at 717 Stanford Street, Los Angeles, California. The new building provides a floor space of 8,000 square feet, which is used for warehousing purposes. The company is a jobbing house and handles fine papers and printing papers only. Mr. Walter Reed is manager.

Pomona Products In Full Production

The Pomona Paper Products, Inc., is now in full production according to Paul R. May, president of the new firm. Two eight hour shifts working fifteen employees are now in action. The special stamping unit which stamps metallic cutting edge on the boxes in which the rolls of waxed paper are packaged is operating. Business is expanding and the company is already established in its new field. Tissue for waxing is supplied by the California Fruit Wrapping Mills which is adjacent.

Clem Reis Dies In Phoenix

Clem F. Reis, aged 48, manager of the Phoenix division of the Zellerbach Paper Co., died of heart failure at the wheel of his automobile late in July. Mr. Reis formerly was sales manager of the Los Angeles division of Zellerbach and was with the firm at Long Beach. He was Pacific Coast representative of the International Printing House Craftsmen.

Hotel Strike Hurt Paper Trade

Harry E. Bean, San Francisco, general manager of the General Paper Co., says the recent 89-day hotel strike in that city cost the paper industry many thousands of dollars.

"First of all the hotels stopped buying," Mr. Bean says, "and this meant the loss of business in wrapped food products and, also, many orders of printing papers, toilets and tissues which the hotels use. Then the Yellow Cab Co. took off 200 cars and this meant 400 drivers stopped buying food—much of which comes wrapped in paper. Then the cooks and waiters and other allied union members were assessed \$5.00 a month throughout the city in strike benefits and this meant their buying power was cut down.

"We're sure glad the strike is over."

Hecht Visiting In East

Victor E. Hecht, San Francisco, vice-president of the Zellerbach Paper Co., left in August to attend meetings of the Hammermill Paper Co. at Erie, Pa., and the S. D. Warren Paper Co. at Poland Springs, Me. He also will visit eastern paper mills. His assistant, Mrs. Glory Palm, sailed from Europe August 4 on her return from a vacation abroad.

Wallace Returns to Coast

Hugh Wallace, San Francisco, returned in July from an eastern trip and expected to go back in August to attend sales meetings of his paper-manufacturing employers—Dill & Collins, Inc., Wheelwright Paper Co. and Mead Sales Co. Hugh reports that his coast predecessor, Andy Cochrane, is working out of the firm's Chicago office, and likes his job fine. W. R. Ingersoll, sales manager of Dill & Collins, will be on the coast in August on his first trip west.

U. S. Paper Company Increases Capital

The United States Paper Company, Los Angeles, California, has just completed a reorganization plan whereby it has increased its authorized capital to \$1,000,000 divided into 100,000 shares of \$3.00 per 6 per cent preferred and 700,000 shares of \$1. common stock. This increased authorized capitalization was necessitated through the increased volume of business that the company is transacting at the present time as compared with previous years, and to further expand its operations.

The new articles were approved by the Secretary of State of California on June 24th, 1937, and the necessary application to the Corporation Commissioner is now being prepared by the company's attorneys.

For the first six months of 1937, from January 1st to June 30th, based on an inventory taken as of June 30th, net profits for this period were \$23,823.98 before making provision for state and federal income taxes and depreciation. In pricing the inventory the company used cost or market value whichever lower. On this basis a number of major commodities such as wrapping paper, gummed tape, waxed papers, folding boxes, napkins, and toilet paper, were priced considerably below present replacement costs and gives the company a substantial inventory reserve against any possible market reaction. This method is in line with the conservative methods used by the company.

The sales together with unfilled orders and contracts on file as of July 3rd were in excess of \$600,000. Most of the un-

filled orders on file were delivered during the month of July on receipt from the manufacturers.

The company is now celebrating its tenth year in the State of California and has made steady progress.

The following constitute the officers and directors of this company: Sam Abrams, president; Max Abrams, executive vice president; S. F. Goldman, vice president; Joe Abrams, vice president; Ben Abrams, secretary; W. C. Hogan, treasurer.

Weunschel East— Jaggard Vacations

J. F. Weunschel, Pacific Coast sales manager for the Hammermill Paper Co., leaves Hoquiam this month to attend the annual Hammermill meeting at Erie, Pa., August 26-28. B. P. (Doc) Jaggard of the Hammermill San Francisco office, vacationed, with Mrs. Jaggard, at Pomin's on Lake Tahoe.

Habel Dies In Oakland

Eugene C. Habel, well-known paper mill man of California, died July 3 of a sudden heart attack. He formerly was with Hawley Pulp & Paper Co. and the Glass Sales Agency and, at the time of his death, was with Ralph F. Reid, in the Cooperative Sales Agency, Oakland, handling coarse paper lines. Mr. Reid paid a tribute to "Gene" Habel in saying that he was a hard and conscientious worker, whose pleasant mannerisms and personal gracious attitude won a place for him in the hearts of his friends.

R. J. Christ Manager of Dobeckmun Branch

Robert J. Christ is manager of the Western Shellmar Products Co., of Oakland, which was bought recently from the Crown Zellerbach Corporation by the Dobeckmun Company of Cleveland. Christ is a son of popular Andrew Christ, Jr., manager of the Western Waxed Paper Co. of Oakland. Western Shellmar prints and converts cellophane papers. Under Crown-Zellerbach ownership, Western Shellmar was housed in the Western Waxed company buildings in Oakland and continues to be located there under the new ownership.

Colton Visits Them All

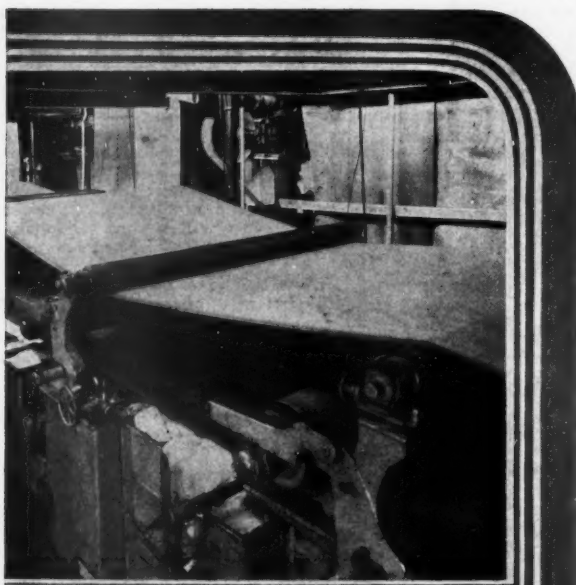
Every large paper manufacturing center—and the Yankees' ball park—was visited on a recent eastern trip by Louis A. Colton, San Francisco, vice-president in charge of purchases of the Zellerbach Paper Co. Louie was gone five weeks and visited Miami Valley, Kalamazoo, Fox River Valley, Springfield, Mass., and New York. In New York he saw Joe Di Maggio drive out one of the longest home runs on record.

Smith Visits Smith

A San Francisco visitor in August was George T. Smith of the Carpenter Paper Co. of Salt Lake. His son, George F. Smith is a salesman with Bonestell & Co., San Francisco paper jobbers.



BLAKE, MOFFITT & TOWNE'S new San Francisco office and warehouse building at 599 Eighth Street at Brannan » » » This well-known Pacific Coast paper concern expected to be settled in the new and larger quarters by the middle of August.



FACTS ARE FACTS

Mills that have conducted comparative felting tests have declared Orr to be the winner. They have found that felts of this famous line will outlast other makes by as much as several days.

If you could visit our factories and see the care with which Orrs are made you would at once realize why these felts have superior weave, nap, porosity, resiliency, and resistance to wear.

The services of our representatives are at your command. Ask any one to specify that particular Orr felt which will best do your water removal job. Contact him directly or write the factory.

The Orr Felt & Blanket Co.
PIQUA, OHIO

Pacific Coast Representative:
WALTER S. HODGES, Pacific Bldg., Portland, Ore.

ORR FELTS

"Why Not More Oregon Pulp Mills?"

The July 31st issue of the Oregon Statesman, published in Salem, Oregon, contained the following editorial which was reprinted with comment by the Astoria-Budget of Astoria, Oregon.

"The Oregon Statesman of Salem prints a very timely and pertinent editorial calling attention to the growing demand for pulp products with other states expanding their production while Oregon's pulp industry remains more or less stationary. Says the Statesman:

"Pulp mills in Washington state have expanded their capacity sharply in the last twelve months. That includes the mills on Puget Sound and Grays Harbor. They are equipping their plants to take care of the additional business which is offered.

"Little plant expansion is under way in Oregon, although this state was the pioneer in paper and pulp manufacture and long led Washington. In this state there is a great abundance of raw material in the way of pulpwood, an abundance of water and plenty of cheap power.

"Why does Oregon lag behind and let Washington step out and take the lead? The demand for pulp has shown a vast increase, for all purposes: paper, rayon, boxboard, bags. New kraft mills are going in in the south, operating on southern pine. But the better pulp comes from the northern woods.

"Can't Oregon overcome its sluggishness enough to encourage expansion of existing plants or installation of new plants so as to get its share of the increased demand for pulp?"

"The editorial is one which finds a hearty echo down here in the lower Columbia. There are no pulp operations in this district although it furnishes a large part of the raw material for distant mills. The Crown Zellerbach corporation, for instance, owns nearly a quarter of the land in Clatsop County but Clatsop County gets very little benefit from this resource. The raw material is dragged more than a hundred miles upriver for manufacturing purposes.

"The mills are now running to capacity and are having difficulty in supplying demand. Prices for news print and other pulp products are climbing. There is much less competition from Scandinavian mills. Just why a pulp mill is not built in the lower Columbia, near the source of raw material, is inexplicable."

REDDY KILOWATT

Your Electrical Servant, Says:



*"Wake up and sing
As you jump out of bed,
I'll do the work—
Summer joys lie ahead."*

★

**PUGET SOUND POWER
& LIGHT COMPANY**

"To Best Serve the Public Interest"